

SureCross DX99...B FlexPower Node Installation Guide



Installation Guide for the DX99...B Metal FlexPower Nodes

Wiring Diagrams

Terminal Blocks and Wiring

For CSA C/US and LCIE/ATEX approved wiring procedures and to check the Entity Parameters (Safety Parameters), refer to the complete control drawing, document [141513](#) at www.bannerengineering.com.

The GND connection can be considered the same as the housing ground when using a stainless steel antenna feedthrough (model BWA-HW-016 or BWA-HW-017).

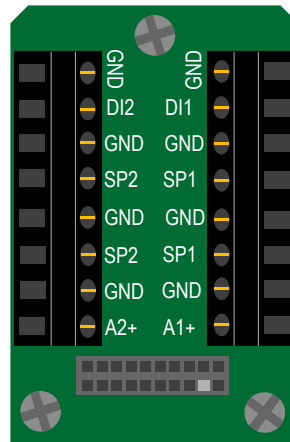
When the stainless steel antenna feedthroughs are not used, the GND connection is isolated from the metal housing.

Models

Discrete and Analog Models

- DX99N9X1S2N0M2X0B2
- DX99N2X1S2N0M2X0B2
- DX99N9X1S2N0M2X0B1
- DX99N2X1S2N0M2X0B1
- DX99N9X1S2N0V2X0B2
- DX99N2X1S2N0V2X0B2
- DX99N9X1S2N0V2X0B1
- DX99N2X1S2N0V2X0B1

Terminal Blocks



Description

Ax+ and Ax-. Analog IN x. Analog inputs for devices requiring more than one connection, such as thermocouples or RTDs. When there is no Ax-, use Ax+ as an analog input.

DIx. Discrete IN x.

GND. Ground/dc common connection.

SPx. Switch Power. Provides variable power sources for external devices.

Thermocouple Models

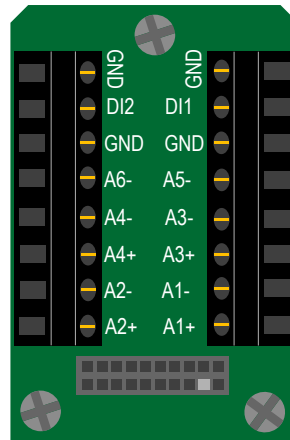
- DX99N9X1S2N0T4X0B0
- DX99N2X1S2N0T4X0B0

RTD Models

- DX99N9X1S0N0R4X0B0
- DX99N2X1S0N0R4X0B0

Bridge Models

- DX99N9X1S2N0B2X0B0
- DX99N2X1S2N0B2X0B0



Assembly



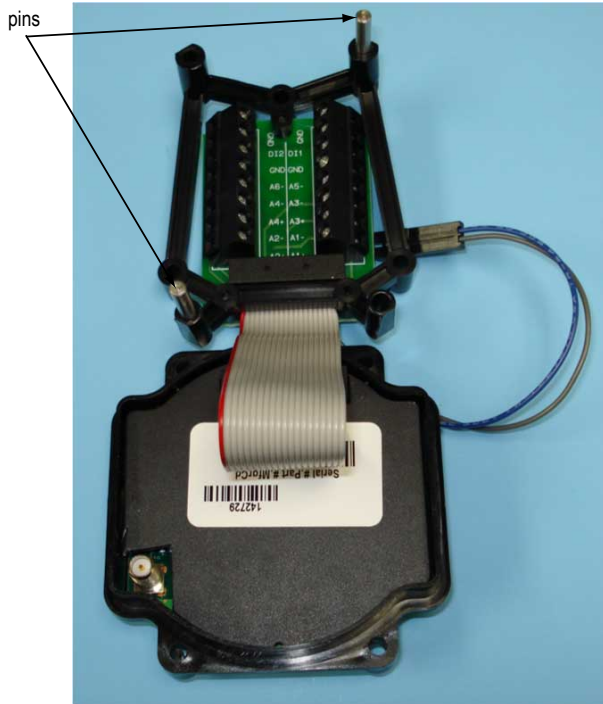
The DX99 unit ships as a complete unit, including the radio core, housing, and integrated battery. A small bag containing a black flexible antenna extension cable and three mounting screws (DX99...B models) or terminal strip (DX99...D models) is also included in the shipment.

Though these images show the DX99...B model, the DX99...D model is assembled similarly.

(For internal antenna models, the flexible antenna extension cable is not included.)

To unpack and wire the unit:

1. Open the end with the glass window and remove the radio core. This core unit ships from Banner placed within the compartment without being fastened down.

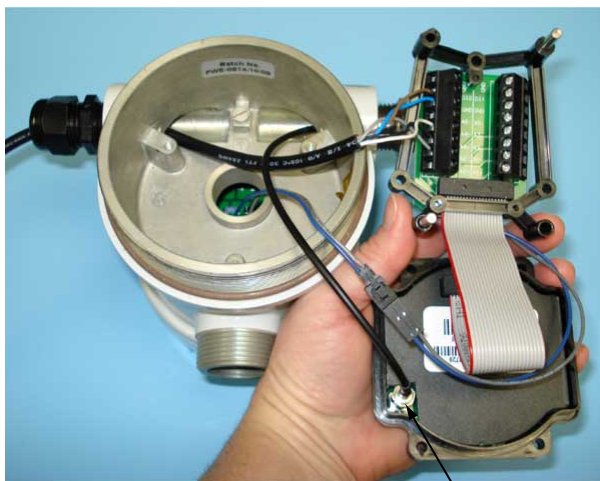
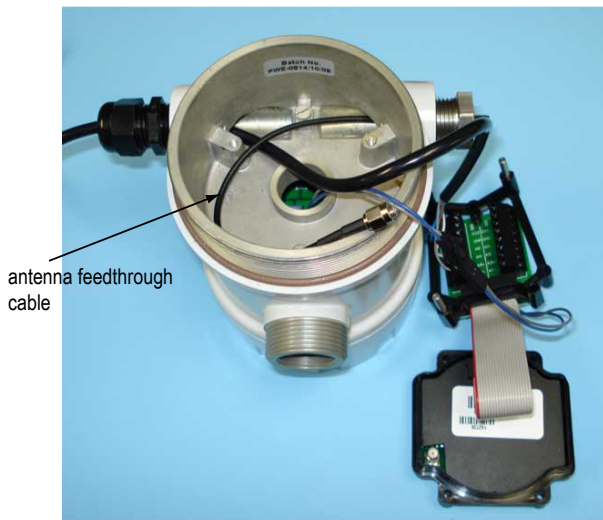


2. Gently pull the radio cover away from the screw terminal board. These two components are held together using pins, not screws.



3. Insert your sensor wires through a cable gland and one of the two 1/2" NPT ports. Wire the sensor wires into the screw terminals according to the control drawings, p/n 141513.

Use a cable gland certified for your region and environment.



4. Thread your antenna cable through a cable gland and into the other 1/2" NPT port. Use a cable gland certified for your region and environment. (Not applicable for internal antenna models.)

When using the stainless steel antenna feedthrough (sold separately), thread the antenna cable through the port and thread the stainless steel antenna feedthrough into the port. For a waterproof seal, refer to the waterproofing instructions in Banner document 132607.

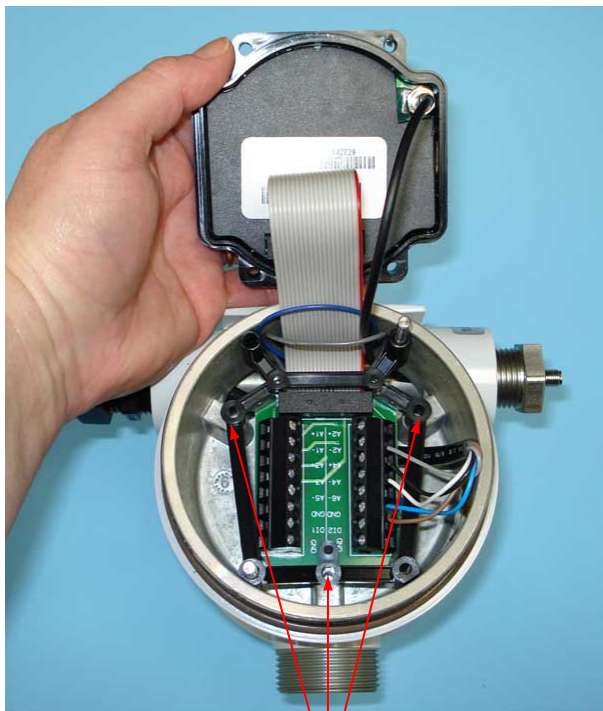
5. Connect the end of your antenna cable to the supplied flexible antenna extension cable or to the antenna connector on the stainless steel antenna feedthrough. (The supplied flexible antenna extension cable remains inside the DX99 housing.)

6. Connect the blue and gray power wires coming from inside the battery compartment to the power wires attached to the bottom of the board.

7. Attach the flexible antenna extension or antenna feedthrough cable to the radio unit's antenna connector. (Not applicable for internal antenna models.)

8. Allow both the flexible antenna extension cable and the sensor cable to feed under the screw terminal board in the direction of the antenna connector (shown).

9. Feed any excess power wires back into the battery compartment.



screw locations

pins



10. Using the three screws that shipped with the flexible antenna extension cable, mount the screw terminal board to the metal housing.

11. Pull any excess antenna cable or sensor cables out of the metal housing.

12. Align the radio cover's pin holes onto the pins in the screw terminal board and reconnect the two components together.

The plastic gland is shown as an example. Use glands appropriate for your application.

This stainless steel antenna feedthrough is an accessory and does not ship with the metal housing models.



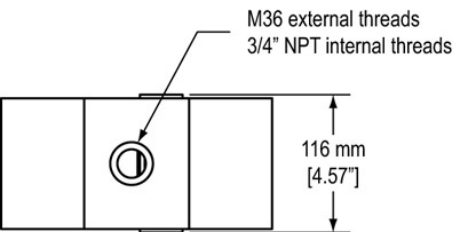
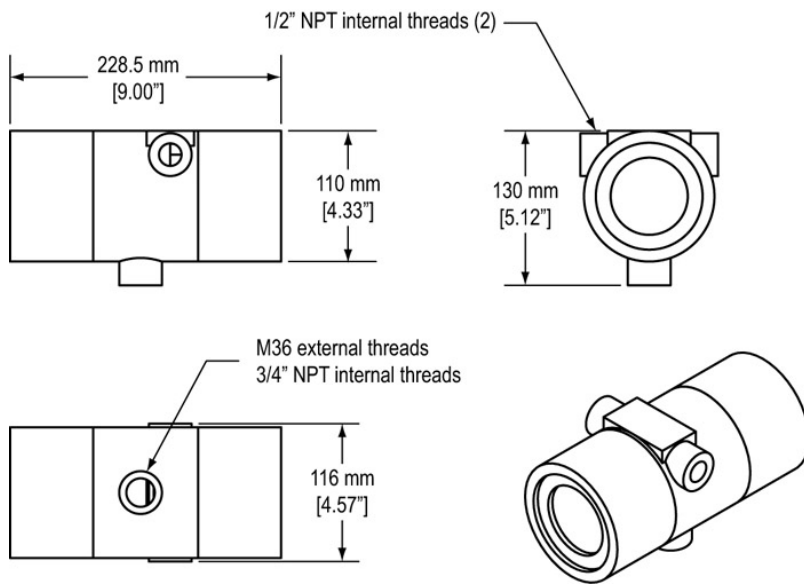
Seal all openings:

13. To seal all ports, use glands appropriate for your application. Tighten all glands according to their manufacturer's instructions and seal all fittings. Refer to the control drawings, p/n 141513.

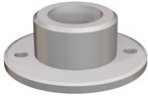


14. Close the metal cover firmly and lock closed using the set screw.

Metal Housing Dimensions

The metal housing is used for the DX99...B and DX80...B models.



Metal Housing Accessories

	Part No.	Model No.	Description
	12533	BWA-HW-019	M36 Flange Mount (For use with the dual chambered "B" metal housings)
	12534	BWA-HW-020	U-Bolt Mounting Bracket (For use with the dual chambered "B" metal housings)
	11834	BWA-HW-016	Antenna Feedthrough, Stainless Steel, 1/2" NPT (For use with the dual chambered "B" metal housings)
	11835	BWA-HW-017	Antenna Feedthrough, Stainless Steel, 3/4" NPT

DX99 Integrated Battery Replacement (DX99...B Housings)

To replace the lithium "D" cell battery in the metal housings with integrated batteries, follow these steps.



1. Unscrew the lid on the back side of the metal enclosure.
2. Remove the discharged battery and replace with a new battery. Only use a 3.6V lithium battery from Xenon, model number XL-205F.
3. Verify the battery's positive and negative terminals align to the positive and negative terminals of the battery holder mounted within the case. The negative end is toward the spring. Caution: There is a risk of explosion if the battery is replaced incorrectly.
4. Screw on the lid and tighten.
5. After replacing the battery, allow up to 60 seconds for the device to power up.

When removing the battery, press the battery towards the negative terminal to compress the spring. Pry up on the battery's positive end to remove from the battery holder. Properly dispose of your used battery according to local regulations by taking it to a hazardous waste collection site, an e-waste disposal center, or other facility qualified to accept lithium batteries.

As with all batteries, these are a fire, explosion, and severe burn hazard. Do not burn or expose them to high temperatures. Do not recharge, crush, disassemble, or expose the contents to water.

Replacement battery model number: BWA-BATT-001. For pricing and availability, contact Banner Engineering.

Battery Replacement Warnings



Warning: Explosions may result in death or serious injury. Do not remove the instrument cover or open the wiring housing in explosive atmospheres when power and communications are on. Remove the battery-powered device from the hazardous location before opening the cover and replacing the battery.

Warning: The replacement battery MUST be a Banner approved battery, model number BWA-BATT-001. Use of a different battery will VOID the intrinsic safety rating of this device and may result in an explosion!

Warning: When replacing the battery, the negative end of the battery holder is the side with the spring terminal. This side is marked with a minus (-) sign.

Warning: Do not attempt to recharge the battery. These batteries are not rechargeable. Recharging may cause serious injury to personnel or damage the equipment. Replace only with factory recommended batteries.

Warnings

The manufacturer does not take responsibility for the violation of any warning listed in this document.

Make no modifications to this product. Any modifications to this product not expressly approved by Banner Engineering could void the user's authority to operate the product. Contact the Factory for more information.

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Antenna Installation

Always install and properly ground a qualified surge suppressor when installing a remote antenna system. Remote antenna configurations installed without surge suppressors invalidate the manufacturer's warranty.

Always keep the ground wire as short as possible and make all ground connections to a single-point ground system to ensure no ground loops are created. No surge suppressor can absorb all lightning strikes. Do not touch the SureCross™ device or any equipment connected to the SureCross device during a thunderstorm.

Exporting SureCross Radios

It is our intent to fully comply with all national and regional regulations regarding radio frequency emissions. **Customers who want to re-export this product to a country other than that to which it was sold must ensure the device is approved in the destination country.** A list of approved countries appears in the *Agency Certifications* section of the product manual. The SureCross wireless products were certified for use in these countries using the antenna that ships with the product. When using other antennas, verify you are not exceeding the transmit power levels allowed by local governing agencies. Consult with Banner Engineering if the destination country is not on this list.

Banner Engineering Corp Limited Warranty

Banner Engineering Corp. warrants its products to be free from defects in material and workmanship for one year following the date of shipment. Banner Engineering Corp. will repair or replace, free of charge, any product of its manufacture which, at the time it is returned to the factory, is found to have been defective during the warranty period. This warranty does not cover damage or liability for misuse, abuse, or the improper application or installation of the Banner product.

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