Installation Guide

1.0 Notice

- These instructions are for the installation of the D326A, D334A and D339A Point Contact Modules in an analog system controlled by a Fire Alarm Control Panel (FACP) using an advanced digital communications protocol. These modules provide a Class B initiating device circuit. They allow the panel to supervise their circuits for contact closure, contact opening, or wiring fault. The D326A, D334A and D339A modules are compatible with the D8024, D9024, D10024 Radionics Analog Fire Alarm Control Panels (FACP).
- Installing detection devices in an analog system consists of:
    - Addressing the Devices.
    - Wiring the Modules to the FACP.
    - Wiring the Devices to the Module.
    - Installing the Module in a Back Box.

These instructions detail procedures to follow in order to avoid damage to equipment.

2.0 Installation Standards

- Install, test, and maintain these devices according to these instructions, NFPA 72, Local Codes and the Authority Having Jurisdiction. Failure to follow these instructions may result in failure of the device to initiate a proper response. Radionics is not responsible for improperly installed, tested or maintained devices.

3.0 Point Contact Modules

Table 1: D326A, D334A, D339A Specifications

Model #	Description	Voltage Range	Idle Current	Polling Current	Alarm Current
D326A	4” module on plate	17 - 41VDC, 24VDC Nominal	350µA	22mA ± 20%	28mA
D334A	remote module	17 - 41VDC, 24VDC Nominal	350µA	22mA ± 20%	28mA
D339A	remote module	17 - 41VDC, 24VDC Nominal	350µA	22mA ± 20%	28mA

4.0 LED Functions

- All three point contact modules have an LED that flashes green when the module is active, indicating that they have been correctly programmed and learned into the system. When a device is polled, the LED flashes once every 18 seconds. The LED will flash red when an input circuit is faulted.

5.0 Device Descriptions

- The D326A, D334A and D339A are single ID addressable device input modules. They provide a point for connection of a two-wire dry contact closure device input loop with the FACP. All are UL Listed for fire alarm initiating device and supervisory device applications. The address is set by programming an EEPROM microchip.
- The D326A module mounts on a plate that attaches directly to a UL Listed four-inch square back box having a minimum depth of 2-1/8 inches. A cover plate leaves the status LED visible. The D326A has a response time of 2 seconds.
- The D334A module is mounted in a plastic enclosure that attaches to the inside of a back box and is normally out of view. The D334A has a response time of 2 seconds.
- The D339A is part of the D325A Manual Fire Alarm Box. The D339A will allow a Fire Alarm Control Panel (FACP) to recognize an activation within 2 seconds. This module can be mounted into any gang back box.

6.0 Addressing the Devices

IMPORTANT

The device address must be set before the cover plate is attached. When using the back box enclosure, the address must be set before the module is placed in the enclosure.

- Each detector device or module in an analog system has a specific address that is set by programming an EEPROM microchip. Each polling circuit can support up to 126 addresses. It is not necessary to wire the devices in any particular order in the circuit.

6.1. Using the D5070 Analog Device Programmer

IMPORTANT

The D5070 Analog Device Programmer must be used when programming addresses on the D326A, D334A and the D339A. Make sure the battery is connected prior to programming.

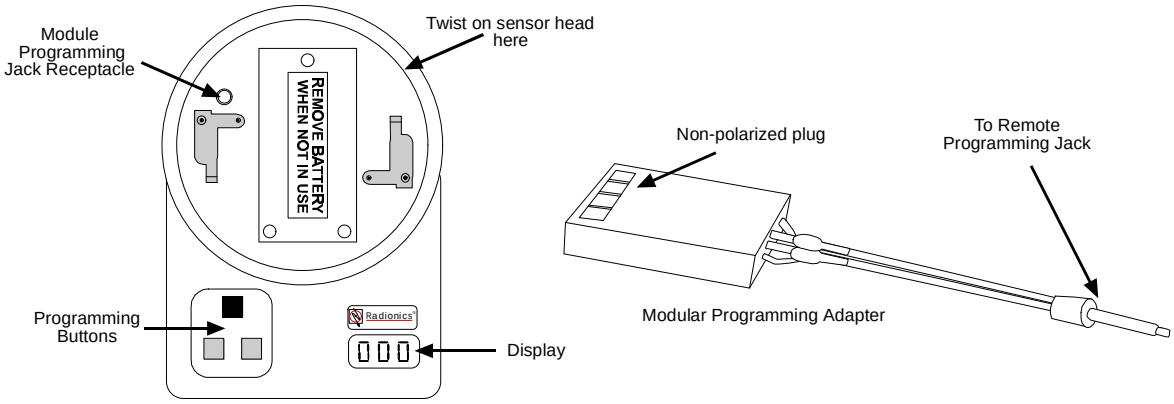

Figure 1: D5070 Analog Device Programmer and Module Programming Adapter

D5070 Programming Buttons

- See Table 2 for a description of the three programming buttons on the D5070 Analog Device Programmer.

Table 2: D5070 Programming Buttons

Programming Button	Description
Left Gray Button	Power On. Automatically reads the address of a sensor. Subsequent operations will advance the device by ten.
Right Gray Button	Power Off. Advances the device address by one.
Red Button	Stores the displayed address to the device, and is used to read analog levels.

WARNING

Polarity must be observed for proper address setting.

Setting the Address

- The following steps explain how to set an address using the D5070 Analog Device Programmer. See Figures 1 - 3 for more details.

    1. To program the address on the D326A or D334A, insert the non-polarized plug on the Programming Adapter into the address programming pins on the D326A/D334A module. Plug the remote programming jack on the Programming Adapter into the remote programming jack receptacle on the D5070 Analog Device Programmer (See Figure 2).
    2. Press the left gray button to turn the D5070 on. A battery check message will appear followed by the device's address.
    3. Set the required address by pressing the left and right gray buttons until the desired address is reached (the display will show three red flashing dots if the address being programmed is different than the device's current address).
    4. When the desired address is displayed, press the red button to store that address. The three red dots on the display will no longer be present.
    5. To program the address on the D339A, the black and red wires that extend from the Programming Adapter must be wired to the terminal strip on the D339A module (See Figure 3). Plug the remote programming jack on the Programming Adapter into the remote programming jack receptacle on the D5070 Analog Device Programmer, and then follow steps 2 through 4 as described above.

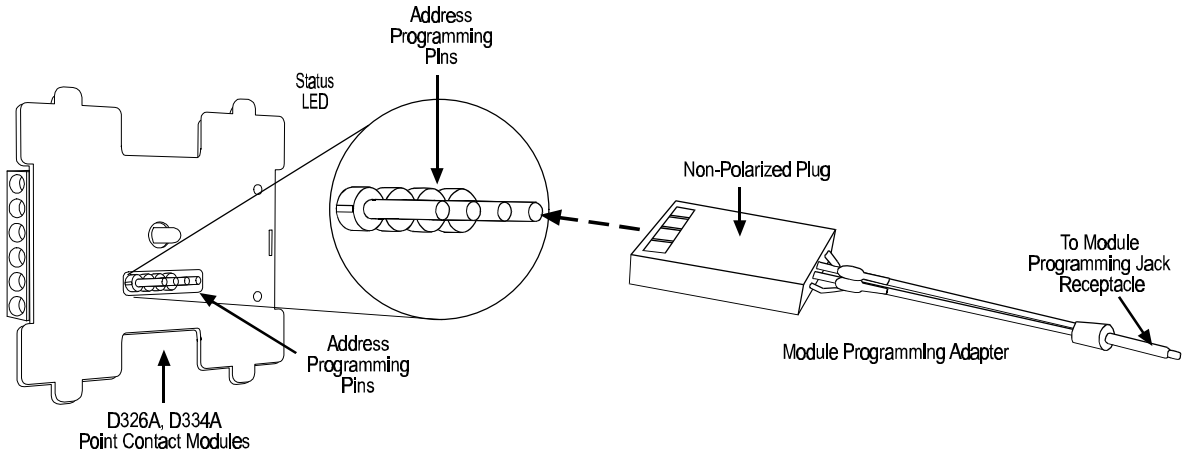

Figure 2: D326A/D334A Programming Connections

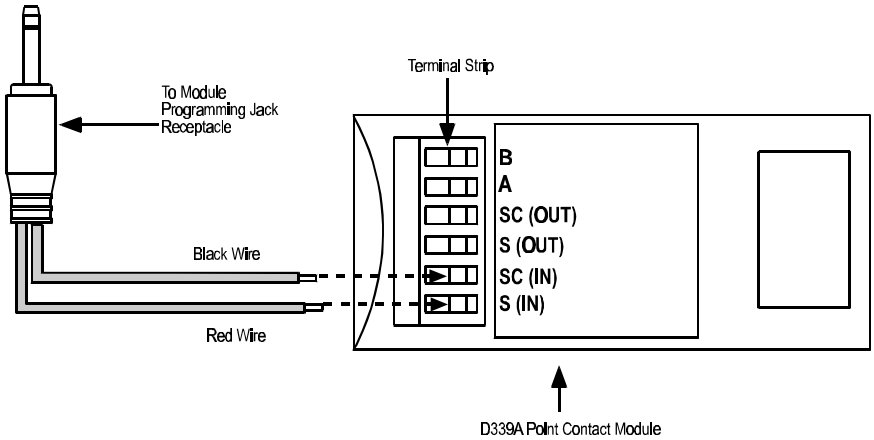

Figure 3: D339A Programming Connections

Reading Analog Value

- Install the module and power the D5070 up as previously described. Press the red button. An “A” will appear on the display followed by the analog value. This value will be continuously updated for 3 minutes or until the unit is turned off. See Table 3 for device address information.

Table 3: Address Information Data Table

Device	Standard Pre-Alarm Threshold	Standard Fire Threshold	Just Calibrated	Range	Normal Reading	Fault Input	Fire
D322A Heat Detector	113°F (45°C)	142°F (61°C)		136°F - 149°F (58°C - 65°C)			
D323A Photoelectric Detector	2.5 %	3%	.1%	.5% - 4%			
D324A Ion Detector	1%	1%	1%	N/A			
D325A Manual Station					16		64
D326A Point Contact Module					16	44	64
D327A NAC Output Module					16	44	
D328A Addressable Relay Module					16		
D334A Point Contact Module					16	44	64
D339A Point Contact Module					16	44	64

Display Messages

- See Table 4 for a description of the display messages that may appear on the D5070 Analog Device Programmer.

Table 4: Display Message Descriptions

Display Message	Description
bat	Battery Check. Displayed upon power up, and when the battery is low. A low battery is good for up to 3,000 address setting operations.
E0	Address past 127 will not be recognized by the panel.
E1	Attempting to program an address with no device connected.
E2	Cannot find the device after power up or replace device.
E3	Replace detector.
E4	Cannot find the device to program.
E5	Device read error.
E6	Replace detector.

7.0 Wiring the Modules to the FACP

- Analog Polling Circuits connect to the FACP over two-wire cable. The circuit resists interference from most types of EMI and RF generated noise, and no special wiring requirements are required other than attention to wire gauge. Under extremely noisy conditions, use twisted pair wire to reduce interference.
- If EMI is a problem, use shielded cable, being careful to ground the drain wire to the “E” terminal on the FACP Control Module. See the Control Panel Installation Guide for details.

7.1 Circuit Configuration

- Polling circuits connect to the FACP in either a Class “A” or a Class “B” circuit. “T” tapping is acceptable in Class “B” circuits only. For specific Class “A” and “B” circuit installation requirements, see NFPA 72.
- See the Installation Instruction for the FACP for instruction on connecting the polling circuit to the panel.

7.2 Device to Circuit Wiring

- Wire the D326A, D334A or the D339A in the polling circuit by connecting the Data/Power Positive (+) and Data/Power Common (-) terminals as shown in Figure 3.

CAUTION

Disconnect all power to the FACP before installing this module.

7.3 Circuit Length

- **Data Circuit Length** is the distance over the circuit wire from the connection at the FACP to the most distant device and back to the FACP. Data Circuit Length must include the distance to any device connected to the circuit in a "T" tap. **The screw terminals will accept 14 AWG (1.5 mm) but this will reduce the allowable length of the circuit.**

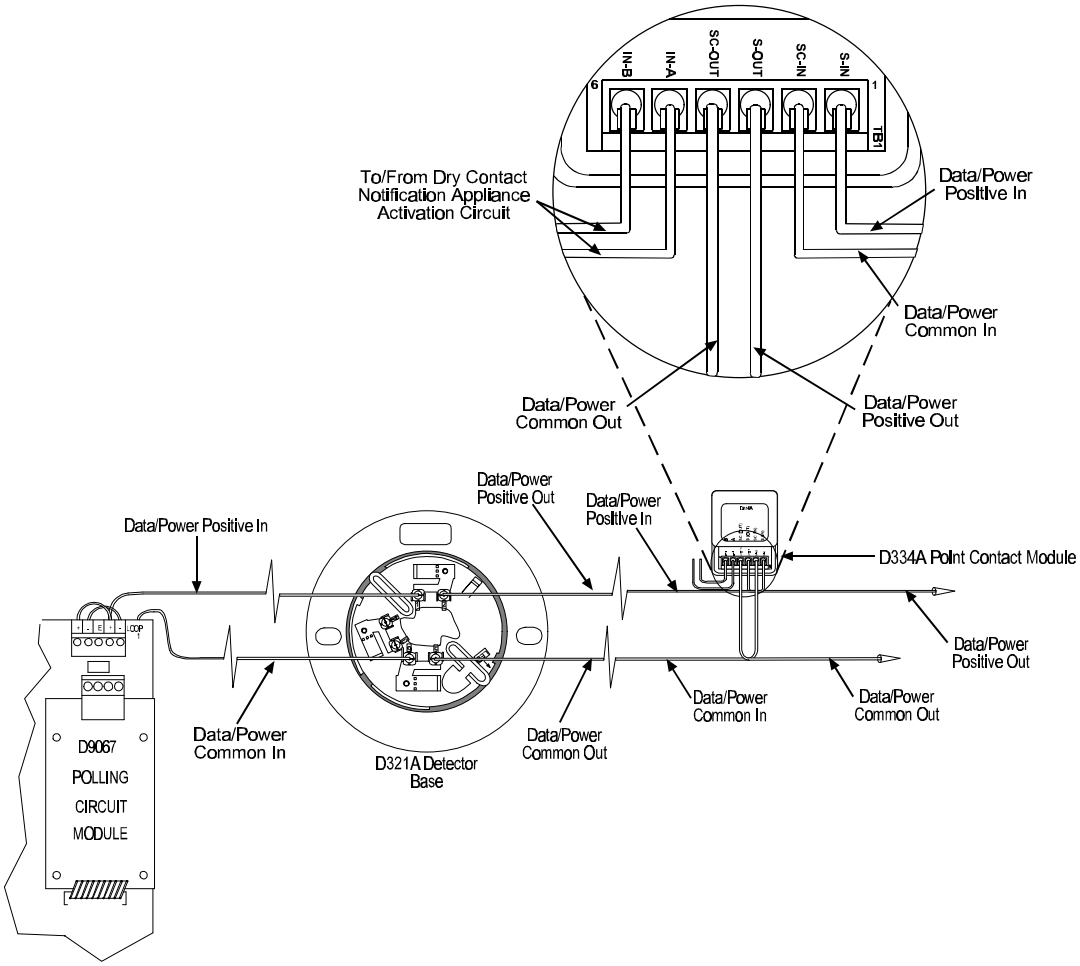

Figure 4: Point Contact Module to Circuit Wiring

Table 4: Polling Circuit Length/Wire Gauge

Polling Circuit Length	Wire Gauge
Up to 4,000 ft. (1,219 m)	18 (1.1 mm)
Up to 7,200 ft. (2,195 m)	16 (1.3 mm)
Up to 6,800 ft. (2,073 m)	14 (1.5 mm)

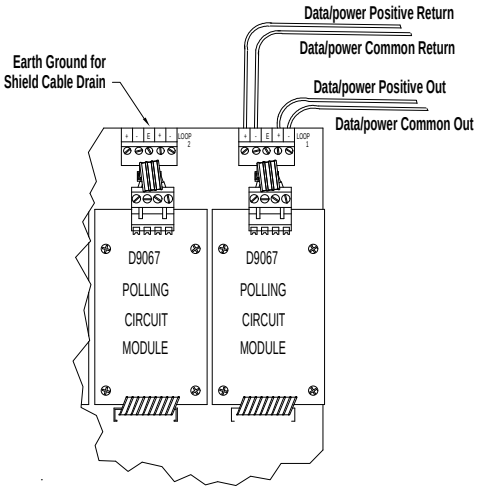

Figure 5: "E" Terminal Location

7.4 Shielded Cable

- If shielded cable is used, and the cable is of good quality, then it should not have a significant effect on the polling circuit length. Good quality shielded cable will allow 1µfd of capacitance, 1mH of inductance and 50 ohms resistance.
- Connect the drain wire for shielded cable to the E terminal of the Data Terminal Block at the FACP. See Figure 5 for details.

IMPORTANT

Unless the shielded cable is properly grounded, it may aggravate rather than eliminate noise problems. The shield must be reconnected each time the cable is cut to install a device.

8.0 Wiring Devices to the Point Contact Module (Initiating Device Circuit)

- The Initiating Device Circuit may use any number of UL-listed Normally Open (N/O) contact closure devices. Do not mix fire alarm initiating and supervisory devices on the same module. Device circuit wiring shall not exceed 50 ohms. Install contact closure devices according to the manufacturer's installation instructions.
- All wiring shown is supervised and inherently power-limited.

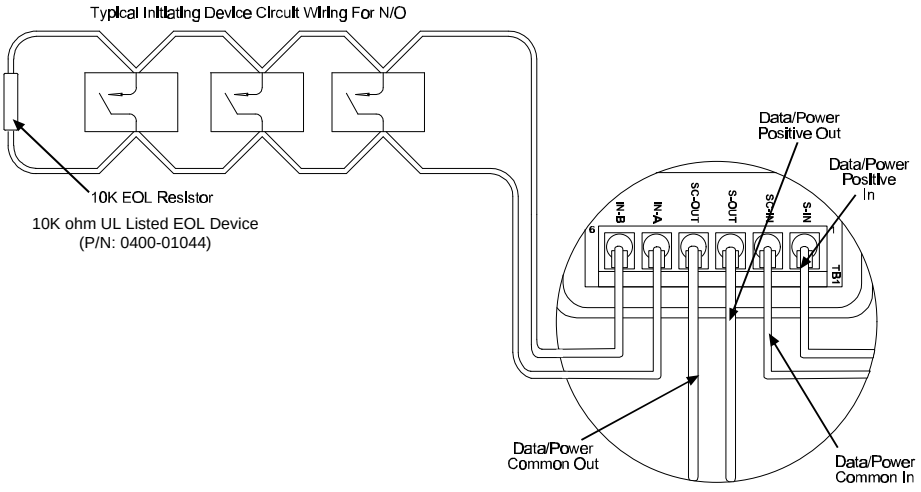

Figure 6: NFPA 72 Style B Initiating Device Circuit

9.0 Installing Point Contact Modules in the Back Box

- Wiring for the D326A, D334A and D339A is identical. Refer to the following sections for specific installation instructions regarding the D326A, D334A and the D339A.

9.1 D326A Installation

- The D326A module mounts on a plate which attaches to a 4-inch square electrical box at least 2-1/8" deep. A cover plate conceals the address programming pins and leaves the LED visible. After wiring the module to the FACP and connecting the initiating device circuitry as shown in Figure 6, attach the Point Contact Module plate to the back box as shown in Figure 7. Install the cover plate.

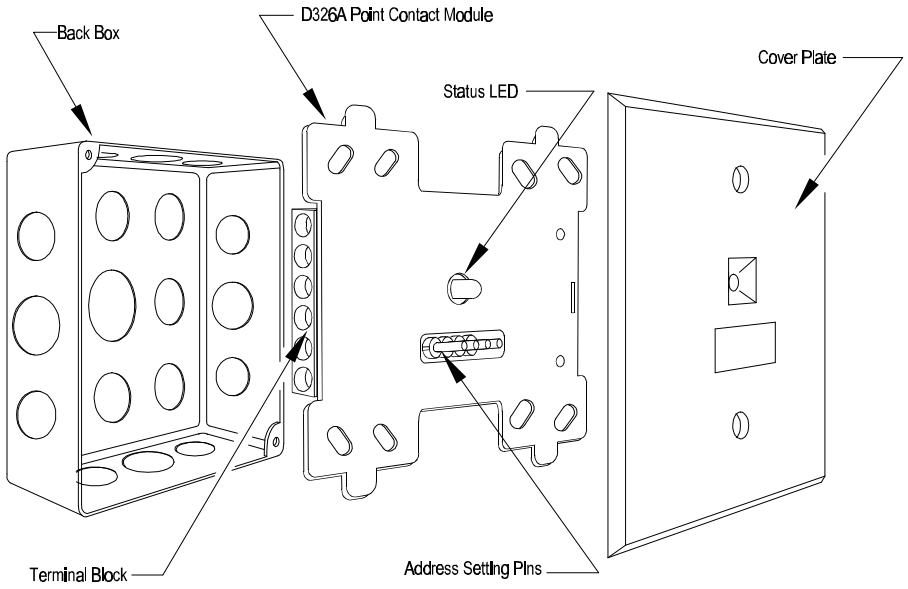

Figure 7: Mounting Plate Installation for the D326A

9.2 D334A Installation

IMPORTANT

Set the D334A address before wiring the module and installing it in the back box. Once the D334A is installed in the back box, setting or changing the address will involve removing the device and removing and opening the module case.

- The D334A mounts in a single gang back box behind the device and is secured with a Velcro patch. A retrofit installation in a manual pull station is a typical application of the D334A.
- Connect the module to the FACP and to the initiating device as shown in Figure 9. Set the module in the enclosure back and snap the enclosure top closed over it. Attach the enclosure to the Velcro patch in the back. See Figure 8 for more details. Install the initiating device.

9.3 D339A Installation

- The D339A can mount in any single gang back box, and it is part of the D325A Manual Fire Alarm Pull Box. The D339A attaches to the back box with a Velcro patch. See Figure 8 for back box installation details.

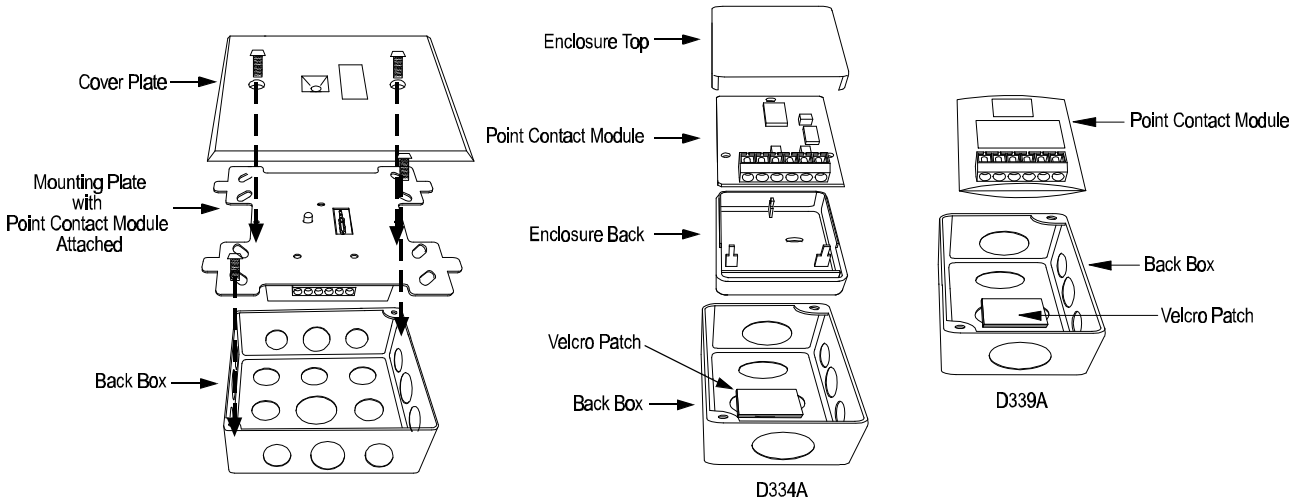

Figure 8: Point Contact Module Installation

CAUTION

Remove AC and standby power from the FACP before connecting or disconnecting any devices.

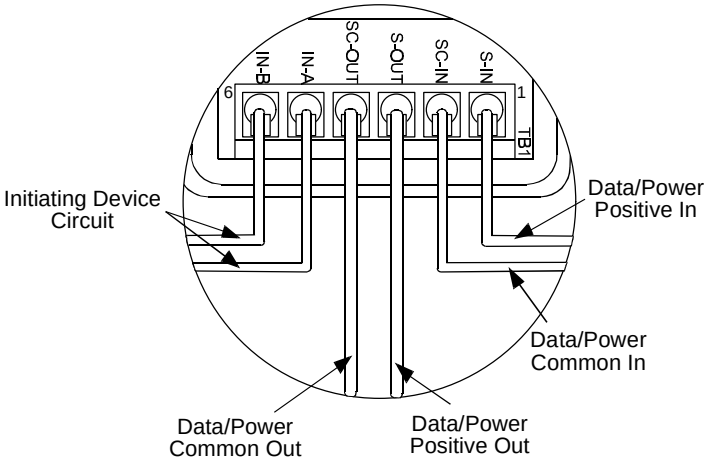

Figure 9: D334A Wiring