



**Engineering Excellence!**

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OPERATING INSTRUCTIONS FOR

## Model DB-300

### Single Channel Loop Detector Demonstration Box

#### I. General Description

The DB-300 is used to demonstrate the features of Reno A & E's Models AX, B, and BX single channel loop detectors. It can also be used to test and/or troubleshoot problems with these detectors.

#### II. Operating Instructions

- 1) Connect the DB-300 to an appropriate power source. If you are using the DB-300 with a 120 VAC detector (Model AX-3, B-3, or BX-3), simply plug the power cord into a 120 VAC outlet. If you are using the DB-300 with a 24 VAC detector (Model AX-7, B-7, or BX-7), connect the power cord of the DB-300 to the output of a Variac set to provide 24 VAC power. If you are using the DB-300 with a 12 VDC detector (Model AX-23, B-23, or BX-23), connect the power cord of the DB-300 to a 12 VDC power source. If you are using the DB-300 with a 24 VDC detector (Model AX-24, B-24, or BX-24), connect the power cord of the DB-300 to a 24 VDC power source.

If using a 12 or 24 VDC power source, polarity is not important. Connect the DC+ lead to either prong of the DB-300 power cord and the DC- lead to the other prong.

**NOTE: The DB-300 is designed to be used with 120 VAC, 24 VAC, 12 VDC, and 24 VDC detectors only. Under no circumstances should the DB-300 be connected to a 240 VAC power source.**

- 2) Set the POWER switch to the "OFF" position and the LOOP switch to the "NORM." position.
- 3) Connect the detector to the DB-300 by inserting the 11-pin connector on the back of the detector into the 11-pin receptacle on the top of the DB-300. Note the location of the key slot on the receptacle and the corresponding keying tab on the detector connector.
- 4) If you have connected a single output detector (Model AX) to the DB-300, one of the "A" Relay LEDs on the DB-300 should be illuminated. If you have connected a Fail Safe detector, the "N/O" LED should be on. If you have connected a Fail Secure detector, the "N/C" LED should be on.  
If you have connected a dual output detector (Model B or BX) to the DB-300, one of each of the "A" Relay and "B" Relay LEDs on the DB-300 should be illuminated. If you have connected a Fail Safe detector, the "A" Relay "N/O" LED and the "B" Relay "N/C" LEDs should be on. If you have connected a Fail Secure detector, the "A" Relay "N/C" LED and the "B" Relay "N/C" LEDs should be on.
- 5) Set the POWER switch to the "ON" position. Any "N/O" indication on the "A" Relay or "B" Relay LEDs should change to "N/C". The detector power (PWR or POWER) LED and one of the frequency (FREQ) LEDs (Model B only) should be illuminated.
- 6) Place the toy car that was included with the DB-300 over the white circle labeled LOOP to simulate a vehicle detection. The "N/C" indication on the "A" Relay or "B" Relay LEDs should change to "N/O" and the detect (DET or DETECT) LED on the detector should come on.

If you have connected a Model AX detector to the DB-300 and the detector output is set to operate in Pulse Mode, the "N/C" indication on the "A" Relay LEDs will momentarily change to "N/O" and then return to "N/C".

If you have connected a Model B or BX detector to the DB-300 and the detector Relay "B" output is set to operate in Pulse Mode, the "N/C" indication on the "B" Relay LEDs will momentarily change to "N/O" and then return to "N/C". If Relay "A" and Relay "B" are both set to operate in Presence Mode, the "N/C" indication on the "A" Relay and "B" Relay LEDs should both change to "N/O".

OPERATING INSTRUCTIONS FOR

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### Single Channel Loop Detector Demonstration Box

#### I. General Description

The DB-300 is used to demonstrate the features of Reno A & E's Models AX, B, and BX single channel loop detectors. It can also be used to test and/or troubleshoot problems with these detectors.

#### II. Operating Instructions

- 1) Connect the DB-300 to an appropriate power source. If you are using the DB-300 with a 120 VAC detector (Model AX-3, B-3, or BX-3), simply plug the power cord into a 120 VAC outlet. If you are using the DB-300 with a 24 VAC detector (Model AX-7, B-7, or BX-7), connect the power cord of the DB-300 to the output of a Variac set to provide 24 VAC power. If you are using the DB-300 with a 12 VDC detector (Model AX-23, B-23, or BX-23), connect the power cord of the DB-300 to a 12 VDC power source. If you are using the DB-300 with a 24 VDC detector (Model AX-24, B-24, or BX-24), connect the power cord of the DB-300 to a 24 VDC power source.

If using a 12 or 24 VDC power source, polarity is not important. Connect the DC+ lead to either prong of the DB-300 power cord and the DC- lead to the other prong.

**NOTE: The DB-300 is designed to be used with 120 VAC, 24 VAC, 12 VDC, and 24 VDC detectors only. Under no circumstances should the DB-300 be connected to a 240 VAC power source.**

- 2) Set the POWER switch to the "OFF" position and the LOOP switch to the "NORM." position.
- 3) Connect the detector to the DB-300 by inserting the 11-pin connector on the back of the detector into the 11-pin receptacle on the top of the DB-300. Note the location of the key slot on the receptacle and the corresponding keying tab on the detector connector.
- 4) If you have connected a single output detector (Model AX) to the DB-300, one of the "A" Relay LEDs on the DB-300 should be illuminated. If you have connected a Fail Safe detector, the "N/O" LED should be on. If you have connected a Fail Secure detector, the "N/C" LED should be on.  
If you have connected a dual output detector (Model B or BX) to the DB-300, one of each of the "A" Relay and "B" Relay LEDs on the DB-300 should be illuminated. If you have connected a Fail Safe detector, the "A" Relay "N/O" LED and the "B" Relay "N/C" LEDs should be on. If you have connected a Fail Secure detector, the "A" Relay "N/C" LED and the "B" Relay "N/C" LEDs should be on.
- 5) Set the POWER switch to the "ON" position. Any "N/O" indication on the "A" Relay or "B" Relay LEDs should change to "N/C". The detector power (PWR or POWER) LED and one of the frequency (FREQ) LEDs (Model B only) should be illuminated.
- 6) Place the toy car that was included with the DB-300 over the white circle labeled LOOP to simulate a vehicle detection. The "N/C" indication on the "A" Relay or "B" Relay LEDs should change to "N/O" and the detect (DET or DETECT) LED on the detector should come on.

If you have connected a Model AX detector to the DB-300 and the detector output is set to operate in Pulse Mode, the "N/C" indication on the "A" Relay LEDs will momentarily change to "N/O" and then return to "N/C".

If you have connected a Model B or BX detector to the DB-300 and the detector Relay "B" output is set to operate in Pulse Mode, the "N/C" indication on the "B" Relay LEDs will momentarily change to "N/O" and then return to "N/C". If Relay "A" and Relay "B" are both set to operate in Presence Mode, the "N/C" indication on the "A" Relay and "B" Relay LEDs should both change to "N/O".

7) Remove the car. Any "N/O" indication on the "A" Relay or "B" Relay LEDs should change back to "N/C" and the detect LED on the detector should go off.

8) Press and hold the LOOP button labeled SHORT. The table below lists the possible outcomes of this action:

Model	Detect LED (DET or DETECT)	Loop Fail Indication (FAIL or LOOP FAIL)	"A" RELAY Indication	"B" RELAY Indication
AX	ON	FLASH (1 Hz)	N/O	----
B (Fail Safe)	ON	FLASH (1 Hz)	N/C	N/O
B (Fail Secure)	ON	FLASH (1 Hz)	N/C	N/C
BX (Fail Safe)	ON	FLASH (1 Hz)	N/C	N/O
BX (Fail Secure)	ON	FLASH (1 Hz)	N/C	N/C

9) Release the LOOP button labeled SHORT. The detect LED on the detector should go out and any "N/O" indication on the "A" Relay or "B" Relay LEDs should change back to "N/C".

If you have connected a Model AX or BX detector to the DB-300, the FAIL or LOOP FAIL LED on the detector will begin to flash at a 3 Hz rate indicating a prior loop failure.

10) Reset the detector by pressing the button labeled RESET (Model AX or B) or by changing any DIP switch position except 1 or 2 (Model AX or BX). The detector can also be reset by moving the power switch on the DB-300 to the "OFF" position and then returning it to the "ON" position.

11) Move the LOOP switch to the "OPEN" position. The table below lists the possible outcomes of this action:

Model	Detect LED (DET or DETECT)	Loop Fail Indication (FAIL or LOOP FAIL)	"A" RELAY Indication	"B" RELAY Indication
AX	ON	ON	N/O	----
B (Fail Safe)	ON	ON	N/C	N/O
B (Fail Secure)	ON	ON	N/C	N/C
BX (Fail Safe)	ON	ON	N/C	N/O
BX (Fail Secure)	ON	ON	N/C	N/C

12) Move the LOOP switch to the "NORM." position. The detect LED on the detector should go out and any "N/O" indication on the "A" Relay or "B" Relay LEDs should change back to "N/C".

If you have connected a Model AX or BX detector to the DB-300, the FAIL or LOOP FAIL LED on the detector will begin to flash at a 3 Hz rate indicating a prior loop failure.

13) Reset the detector by pressing the button labeled RESET (Model AX or B) or by changing any DIP switch position except 1 or 2 (Model AX or BX). The detector can also be reset by moving the power switch on the DB-300 to the "OFF" position and then returning it to the "ON" position.

**NOTE:** The DB-300 can be used to test the proper operation of a Model AX, B, or BX connected to low inductance (20 microhenry) loop. To do so, follow steps 1 through 13 as outlined above, but when performing step 2, set the LOOP switch to the "LOW" position.

7) Remove the car. Any "N/O" indication on the "A" Relay or "B" Relay LEDs should change back to "N/C" and the detect LED on the detector should go off.

8) Press and hold the LOOP button labeled SHORT. The table below lists the possible outcomes of this action:

Model	Detect LED (DET or DETECT)	Loop Fail Indication (FAIL or LOOP FAIL)	"A" RELAY Indication	"B" RELAY Indication
AX	ON	FLASH (1 Hz)	N/O	----
B (Fail Safe)	ON	FLASH (1 Hz)	N/C	N/O
B (Fail Secure)	ON	FLASH (1 Hz)	N/C	N/C
BX (Fail Safe)	ON	FLASH (1 Hz)	N/C	N/O
BX (Fail Secure)	ON	FLASH (1 Hz)	N/C	N/C

9) Release the LOOP button labeled SHORT. The detect LED on the detector should go out and any "N/O" indication on the "A" Relay or "B" Relay LEDs should change back to "N/C".

If you have connected a Model AX or BX detector to the DB-300, the FAIL or LOOP FAIL LED on the detector will begin to flash at a 3 Hz rate indicating a prior loop failure.

10) Reset the detector by pressing the button labeled RESET (Model AX or B) or by changing any DIP switch position except 1 or 2 (Model AX or BX). The detector can also be reset by moving the power switch on the DB-300 to the "OFF" position and then returning it to the "ON" position.

11) Move the LOOP switch to the "OPEN" position. The table below lists the possible outcomes of this action:

Model	Detect LED (DET or DETECT)	Loop Fail Indication (FAIL or LOOP FAIL)	"A" RELAY Indication	"B" RELAY Indication
AX	ON	ON	N/O	----
B (Fail Safe)	ON	ON	N/C	N/O
B (Fail Secure)	ON	ON	N/C	N/C
BX (Fail Safe)	ON	ON	N/C	N/O
BX (Fail Secure)	ON	ON	N/C	N/C

12) Move the LOOP switch to the "NORM." position. The detect LED on the detector should go out and any "N/O" indication on the "A" Relay or "B" Relay LEDs should change back to "N/C".

If you have connected a Model AX or BX detector to the DB-300, the FAIL or LOOP FAIL LED on the detector will begin to flash at a 3 Hz rate indicating a prior loop failure.

13) Reset the detector by pressing the button labeled RESET (Model AX or B) or by changing any DIP switch position except 1 or 2 (Model AX or BX). The detector can also be reset by moving the power switch on the DB-300 to the "OFF" position and then returning it to the "ON" position.

**NOTE:** The DB-300 can be used to test the proper operation of a Model AX, B, or BX connected to low inductance (20 microhenry) loop. To do so, follow steps 1 through 13 as outlined above, but when performing step 2, set the LOOP switch to the "LOW" position.