

## R-Series Detectors, Gates and Counters

### Frequently Asked Questions

Technical Note TNC05

The complete Instruction Manual and other notes for this equipment are available on our website.

#### DETECTORS R9500 and R8000

[Question 1: I turn on the detector power switch and nothing happens, what should I do?](#)

If none of the LEDs to the left of Threshold light up then the detector is not getting power. Check the following:

- If powered with C-cell batteries, check that the batteries are fresh. If the batteries are low then the low or dead battery light should be lit on the front of the detector. Fully exhausted batteries will not light the low battery LED.
- If powered with a 12V battery, check that the battery is charged and that the cable between the battery and the *Power Connector* on the rear of the detector is properly connected. A 12 volt battery is considered fully charged at 12.9 volts and fully discharged at 11.4 volts.
- If powered with the NMT 15V Power Supply, check that the cable is properly attached to the *Power Connector* on the rear of the detector. If you are also using a Gate, then the NMT 15V Power Supply must be attached to the *Power Input Connector* on the Gate, and the Gate cable must be attached to the *Electronics Connector* on the rear of the detector.
- If using an extension cord, check that it is functional.
- If the detector still does not work, please contact NMT.

[Question 2: Why does the detector alarm sound intermittently even without a tag present?](#)

- Is the detector on a wobbly stand? Too much motion may set the detector off. Stabilize the stand using non-magnetic supports such as wood or plastic sawhorses.
- Is the detector near motors or near 60Hz power lines? Move the detector to a different location and see if the problem persists.
- Check the desiccant. Is it pink at the end attached to the detector? If so, there is moisture in the detector and this may be causing the problem. Please contact NMT.

### Question 3: How frequently should the desiccant be changed?

Pink is the indication of moist (exhausted) desiccant. Blue is fresh desiccant. Change the desiccant if it is  $\frac{3}{4}$  pink and be sure to change it regularly. If it is pink at the end attached to the detector contact NMT.

### Question 4: Should I store the detector with the desiccant cartridge attached?

Yes. During storage, it is still important to check that the desiccant is fresh. Pink is the indication of moist (exhausted) desiccant. Blue is fresh desiccant. Change the desiccant if it is  $\frac{3}{4}$  pink and be sure to change it regularly. If it is pink at the end attached to the detector, please contact NMT.

### Question 5: Why doesn't the detector alarm sound when I put a tag through the detector?

- Verify that the detector is turned on and that power is getting to the detector (see Question 1 if not).
- Check that the *Sensitivity* knob is set at about 10 o'clock and then run the tag standard through the detector again. If there is still no sound, check to see if the LEDs go above threshold on the front panel of the detector as the tag is passed through. If the LEDs light up and there is no sound, then the *Alarm* may be faulty. If the LEDs do not light up, then there may be a problem with the detector. Please contact NMT.

### Question 6: Should I leave the C-cell batteries in my detector even if I am using a gate?

No, the C-cell batteries should be removed if they are not being used. If the detector is being powered from the Gate then the C-cells are not necessary. They are only required in some of the older model detectors that are used without a Gate.

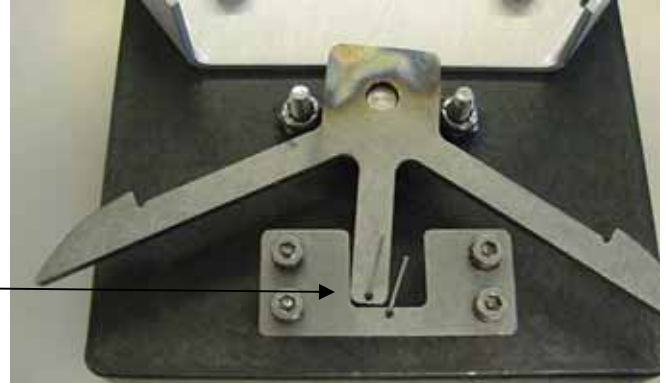
## GATE

### Question 1: My fish are not consistently being diverted in the right direction. What's wrong?

There are several reasons why fish may be incorrectly diverted, and in most cases, the problem can be corrected by the operator. Please check the following and be sure to contact NMT if you have any questions or are unable to correct the problem.

- Verify that you have set the detector so that the default Gate position (the side where untagged fish will go) is properly set to the side where you would like them to go.
- Check that the bent ends of the small spring under the gate box that goes through the latch hook are not interfering with the movement of the latch hook.

Bent spring ends not interfering with the movement of the latch hook.



- If using a 12V NMT battery, check that it is fully charged (see question 1 Detectors).
- Verify that all four rubber bumpers are in place on the gate? The bumpers are important for correctly aligning the gate, and if either of the bumpers on the door is missing, then the fish may not divert properly. (See R-Series Instruction Manual and the R-Series Seasonal Checklist on our website for more details about the bumpers.) Please contact NMT if you need replacement bumpers.
- Make sure that every fish is sent through the detector head first if you are looking for tags in the snout.
- Make sure that the fish are going through the detector at the right speed. We recommend that you attach running water to the detector and that the fish move through at about 1 meter per second. Without water, the fish may get stuck in the detector and the Gate will open and close before the fish gets to the Gate, and will be incorrectly diverted.
- Fish with hooks or other metallic objects may be incorrectly diverted.
- Proper Gate function requires that the Delay and Duration are appropriately set for your sampling session. The Delay is the time lag between when the tag is detected at the center of the detector and when the Gate receives the signal to open. The Duration is the length of time that the gate stays open. If these are not adjusted for the speed with which you are throwing fish through the detector, then the fish will not divert correctly. (See the document Understanding the R-Series Tunnel Detector Gate and Signal Settings on our website.)
  - We recommend that most operators start with the Delay knob set all the way counter clockwise (minimum) and the Duration knob set all the way clockwise (maximum). These settings accommodate the usual speeds of fish pushed through the detector with running water and with a slight separation between fish. Pass a tagged fish through the detector to verify these settings are appropriate. If your fish are being correctly diverted, leave the settings as they are.
  - If your fish are moving more quickly or if more than one operator is putting fish in the detector, you may need to increase the Delay and decrease the Duration. Slowly adjust the Delay and Duration to get the timing correct.

## COUNTER

### Question 1: Why isn't the counter counting?

- If the counter has leading zeros then the battery is low or dead and the counter should be returned to NMT for a battery replacement.
- The battery should last for many years. You can prolong its life during storage by removing the cable attached to the back of the counter. If the cable is attached to the counter without the probes being in the Gate, the battery will drain.
- If you test the function of the counter by attempting to increase or decrease the count when the cable is attached to the back of the counter, but the probes are not in the gate, then the counter will not function. If you remove the cable or if you seat the probes into the holders on the gate, then the counter will count.
- Seat the counter cable probes all the way into the holder on the gate. NMT supplies special springs to hold the probes in place. If these are missing, they can be replaced with elastic bands, or contact NMT for replacement springs.
- If one is available, use a different counter cable to determine if the problem is with the counter or the cable.

### Question 2: Why does the counter count without depressing any buttons and without any Gate openings?

Water may have seeped under the switch and corroded the contacts. Contact NMT.

### Question 3: Why do the counts accumulate on the opposite side from the Gate diversion?

The left and right cables from the counter to the Gate look identical. If you open the left door and it counts on the right, simply switch the probes and reseal them with the springs or elastic bands. Reset the counters to "0".