

PRODUCT MANUAL



Transmitters

Our complete line of pig tracking transmitters are available in a variety of sizes, as well as signal strength, signal type, and battery life configurations. For best results, use the strongest, largest transmitter that will fit on or into the pig safely.

Operation:

Inspect Transmitter and O-Ring for damage or defects.

- For best results, always replace the O-Ring between runs.
- Replacement O-Ring information is available on our website.
- Contact us for more information on O-Rings for unusual environments.
- Use a small amount of O-Ring grease to prevent damage to the O-Ring when closing the transmitter, and to assist sealing.

Caution: Not installing the O-Ring correctly or using a compromised O-Ring will allow the battery compartment to fill with process fluid and may cause permanent damage to the transmitter, or create an unsafe condition if the batteries are compromised or shorted.

Set signal type and strength using switches (as available).

- Depending on the model or transmitter, switches are located inside the battery compartment to set different signal modes and strengths. Some or all of the following options are available:
 - For Continuous or Pulsed operation, use the switch that is labeled - - (for pulsed) and — (for continuous). See the photo (left) for example.
 - For transmitters with an optional High or Low signal strength setting, use the switch labeled **HI** and **LO** to select the desired mode.
 - Check the information provided at purchase to determine the runtime at each setting. Contact us with any questions about runtime at each setting.



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- You can use different signal types to differentiate between multiple pigs in a line.
- Continuous signals are recommended for fast moving pigs, or when using the transmitter signal for precise positioning information (benchmarking).

Insert batteries.

- Insert the batteries positive terminal first (down into the transmitter). See label on body.
- Install only the batteries the transmitter is specified for. Most accept only alkaline batteries. Some models (or custom transmitters) accept 3.6V lithium batteries. Consult the information provided with your purchase, the labels on the transmitter body, or contact us for more information.
- Always use fresh, high quality, industrial batteries. Contact us for suggestions.

Caution: Never mix old and new batteries, as that can cause the batteries to fail and leak inside the transmitter, damaging it and possibly causing a hazardous condition.

Caution: Using a battery size or type the transmitter is not specified to accept will void the warranty, and could damage the transmitter and cause a hazardous condition.

Install cap.

- Screw the cap on the transmitter.
- This will immediately start the transmitter operating. If the pig is not launching soon, you may wish to remove the cap after testing the transmitter to conserve battery life. Be sure to re-install it and check operation before launch.
- Ensure the cap is completely screwed on. There should be very little of the O-Ring visible in the gap between the cap and body, if any.

Test the transmitter's operation.

- Using a receiver (RX-101), or transmitter tester (see our website for more information on both), test that the transmitter is outputting the expected signal.
- You may also wish to check that the transmitter range is as expected. Using a receiver, see at what distance the signal is received. This should be consistent for each signal setting with fresh batteries.

Attach the transmitter to the pig or inline inspection tool.

- If using a delrin housing (recommended), install the transmitter inside the delrin housing and ensure it does not move inside it. Shims or padding may be needed to ensure a tight fit. Install the delrin housing on the pig.
- There are many methods to install a transmitter on a pig. They include stainless steel strapping, purpose built housings, a cavity in the pig, a mounting plate, or towing the transmitter behind the pig. Contact us for suggestions.
- In all cases, ensure that the transmitter is protected from impacts with the pipeline (small D bends) and will not break free with vibration or impact.

Caution: Ensure the transmitter is fixed solidly and cannot move. Vibration and hard impacts can damage or destroy the transmitter.

- If installing inside a metal housing, ensure that sufficient holes are cut in the housing to allow for the transmitters signal to transmit easily. Otherwise the detection range will be greatly reduced.

Additional Information:

Contact us for assistance with transmitter use in dry gas lines.

- In these environments, pigs tend to surge, causing stresses on the batteries and battery springs. This can cause transmitter or battery failure mid-run.
- Comtel Systems Ltd. is able to provide battery cushioning, manufacture battery packs, and provide other suggestions to improve operation in these environments.

Contact us for assistance specifying O-Rings for different environments.

- Check our website for O-Ring information and sizes for each model.
- Different O-Ring materials are designed for use in different environments. For example, different materials are recommended for high pressure gas lines, where anhydrous ammonia is present, or for sour gas.
- Contact us and your O-Ring supplier for assistance.

Troubleshooting:

The transmitter will not turn on.

- Check that the batteries are seated well inside, and touching each other and the battery holder contacts.
- Are the batteries fresh? Always use fresh batteries.
- Is the cap screwed all the way closed?
- Are the batteries the correct type for this transmitter?

The transmitter turns on but the signal is not as expected.

- Are the switches inside set to the desired signal type?

The transmitter gets hot while running.

- Are the batteries damaged? Check that their buttons are not collapsed. This can happen with vibration / impact. Replace the batteries.
- Check the battery compartment for any damage or
- Use Comtel Systems Ltd. transmitters for best results. Contact us for more information and for custom sizes, runtimes and signal types.

The transmitter cap is difficult to install.

- Inspect the transmitter body for damage. If dropped with the cap removed, the threads can be damaged or the body can become out of round. Contact us for assistance.

The transmitter cap is difficult to remove.

- Is the transmitter or cap damaged?
- Take care removing the cap, as there is a chance the battery compartment has pressurized. When this pressure is released while removing the cap, the cap could become a projectile.

The signal is intermittent while running in the pipeline.

- Is the pig surging? This is more common in dry gas lines.
- If a battery pack is not used in these conditions, this can cause the batteries to separate as the pig shudders, making the operation intermittent. Contact us for support for future runs.
- Has the transmitter been running longer than its expected runtime? Low batteries can cause intermittent operation.
- Is the pipeline under heavy depth of cover, or is the pipe wall extra heavy? Road crossings may also have additional pipe protection. This can reduce the received signal strength.