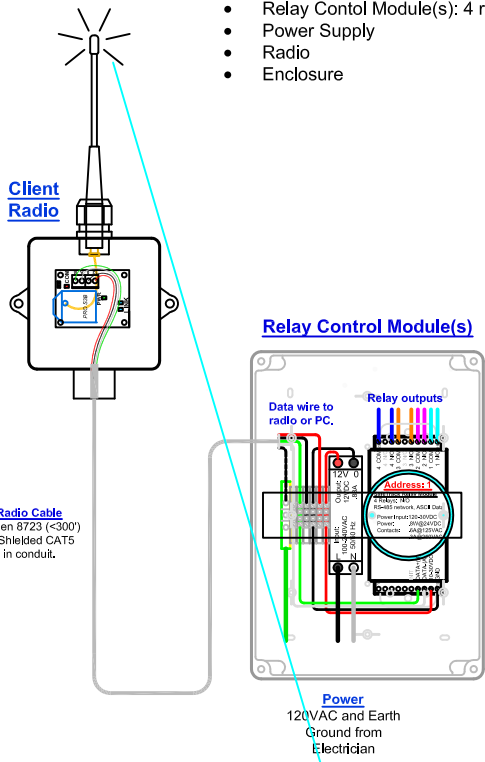


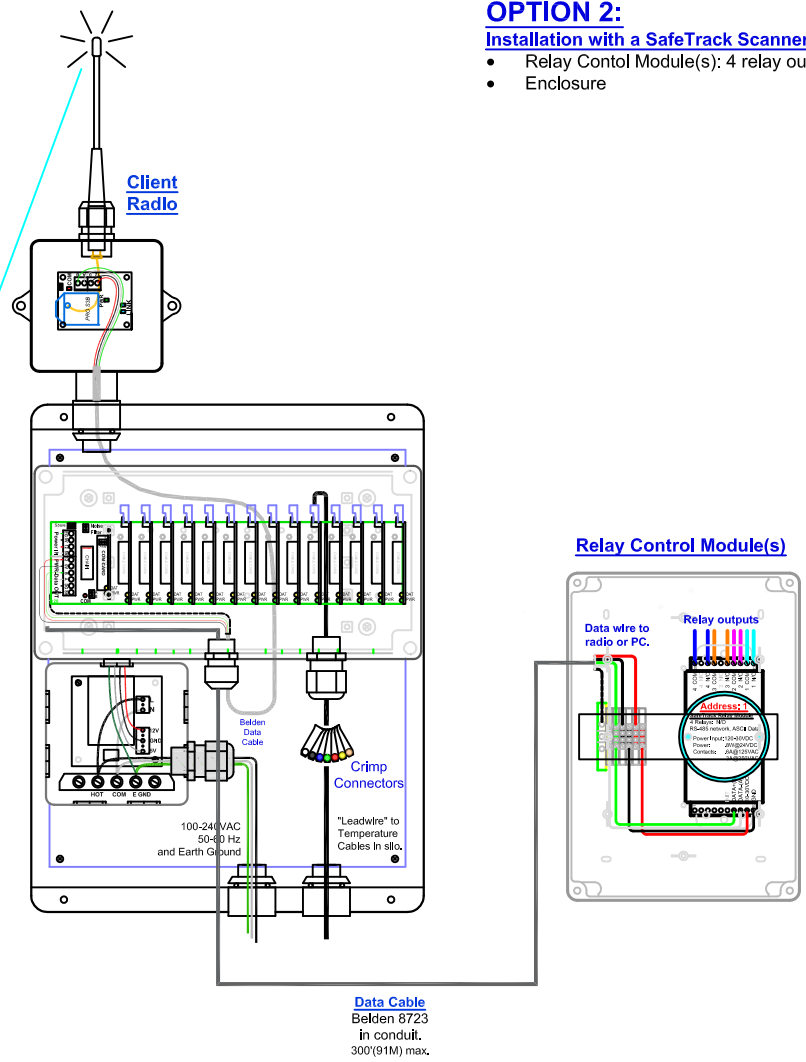
**OPTION 1:**  
**Standalone Installation**

- Relay Control Module(s): 4 relay outputs each
- Power Supply
- Radio
- Enclosure



**OPTION 2:**  
**Installation with a SafeTrack Scanner**

- Relay Control Module(s): 4 relay outputs each
- Enclosure



**Mesh Radios:**  
Position Server Radio to maintain either a direct, or a daisy-chain (hopping), line-of-sight path to each Client and Relay Radio.  
Maximum hop distance = 1 Mi. (1.6km) with unobstructed line-of-sight.

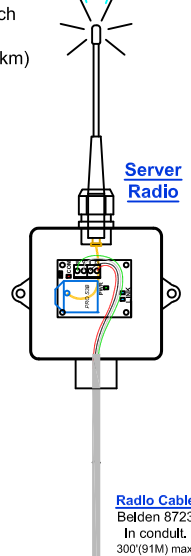
**SafeTrack: Relay Configuration**  
Each Silo is configured to control a:

- Relay Module Address
- Relay Module Channel # (1-4)



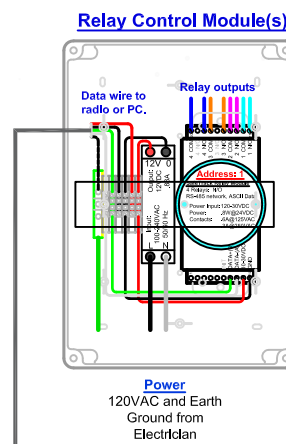
**SafeTrack Computer**

USB Port



**OPTION 3:**  
**Direct Connection to SafeTrack PC**

- Relay Control Module(s): 4 relay outputs each
- Power Supply
- Enclosure



**NOTES:**

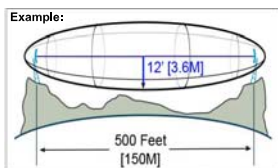
- Each Relay Control Modules has 4 relay outputs.
- Each relay output controls the exhaust fans on 1 silo.
- Each enclosure can contain up to 3 Relay Control Modules.
- Relay Control Modules in the same enclosure or in adjacent enclosures can share 1 power supply and 1 radio.
- Relay Control Module(s) that are located near a SafeTrack Scanner can use the power supply and radio from the Scanner.

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**Important Note: RADIO SIGNALS**

The radio signal path must be unobstructed. The shape of the radio path is elliptical shaped, any structure (silo roof, metal beams, buildings, trees...) that block part of the path will reduce the signal strength.

Max. range = 1 Mile with clear line-of-sight.

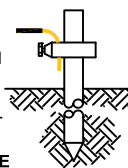


**Important Note: RADIO INTERFERENCE**

Other radio antenna operating on the same frequency (such as a local internet providers) can cause radio interference resulting in a "Scanner Not Found" error. Mount the SafeTrack antenna so that they are shielded (blocked by a large metal structure) from the other antenna, mount directly above or below if possible.

**Important Note: EARTH GROUND**

Every SafeTrack Scanner must connect to a noiseless (clean) Earth Ground: Typically a 6' (2M)L x 1/2" (13mm) diameter copper rod wired per local code. Do not share the Earth Ground with Variable Frequency Drive (VFD) or other motors. A separate dedicated Earth Ground for SafeTrack is highly recommended. **ALL WARRANTIES ARE VOID IF ADEQUATE EARTH GROUNDS ARE NOT CONNECTED.**



**Important Note: ELECTRICAL NOISE**

The power and earth-ground wires must be free of excessive electrical (EMI/RFI) interference. Improperly shielded and grounded Variable Frequency Drive (VFD) motors cause electrical noise that travels through the air, power wires, nearby conduit and shared Earth Grounds and may result in improper SafeTrack operation with **unstable temperature readings.** Do not run SafeTrack wires (temperature cables, leadwire, Belden, CAT5) in conduit with or next to high-voltage wires.

**SafeTrack Relay Module Operation:**

- 4 relay N/O outputs per Relay Module.
- One relay output per Bin, as configured in SafeTrack.
- You must configure the upper-limit temperature trip-point for each bin in SafeTrack.
- The control signal is sent to the Relay Module upon completion of a temperature scan of the bin.
- Relay Trip Options:
  - 1) Any high temperature in the bin (grain or air).
  - 2) High temperature in the grain only.#
  - 3) High temperature in the air above the grain.#
  - 4) Air above the grain is 15F greater than the ambient temperature.#\*

\* This feature requires an optional external Ambient temperature sensor # Grain Level Detection must be enabled (automatic hourly scanning).

NOTE: This drawing may not represent the actual site layout.

|  |                      |               |                 |
|--|----------------------|---------------|-----------------|
| <b>SAFE-GRAIN, INC.</b><br>LOVELAND, OHIO 45140<br>info@safegrain.com 513-398-2500 |                      |               |                 |
| SITE: SAFETRACK<br>RELAY CONTROL MODULE  |                      |               |                 |
| TITLE: INSTALLATION OPTIONS  |                      |               |                 |
| VENDOR:  | DWG NO. B-16-RCM-OPT | DWG REV: 1    |                 |
| JOB NO:  | JOB PHASE:           | DRAWN BY: JTL | DATE: 11-3-2016 |