DVM Systems
Dual Fixed Reader
Installation Guide and User Manual

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Important Safety Warnings and Notices

Safety Signal Symbols

 This symbol means that there is a potential hazardous situation.

 This symbol means that there is a potential electric shock hazard present.

Safety Signal Words

Warning - The word "Warning" indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Dangerous - The word "Dangerous" indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

Electrical Connection Warnings

The installation of DVM Systems' Dual Fixed Reader must comply with local electrical codes.

The safety, usage and maintenance of the electrical wiring installation are the responsibility of the customer. Installation should only be done by someone who has experience with computers and software program installations and who is familiar with computer cabling installation and electrical wiring in agricultural facilities.

There are no user serviceable parts inside the Dual Fixed Reader electrical boxes. Electrical connections and parts inside the electrical boxes are to be accessed only by trained, authorized personnel.

 **Warning!**
We recommend installation be done by a qualified electrician.

- Dual Fixed Reader will need to be located near 110V outlet.
- AC input: 120V AC, 50-400 HZ, 250W

Control Box Location

Only authorized person should open electrical boxes.
Installation must comply with local electrical codes.
Disconnect all voltage
Power source should be 120V or 230/240 V AC

 **Dangerous!**
Electrical shock can cause severe injury or death.
High voltage exists inside control box. Disconnect from breaker before opening lid of control box.

FCC Regulatory Statement

User Information for this Radio Frequency Device

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

To comply with FCC RF safety guidelines, keep the transmitter at least 2.5 cm from the head or body while the transmitter is operating.

“Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.”

Intended Use

The Dual Fixed Reader is an innovative, wireless temperature sensing and identification system. It is designed to automatically and accurately monitor individual cattle internal temperatures as cattle pass by the reader antenna.

The DFR system consists of a reader control box, passive radio-frequency rumen transponder (the Bolus), and driver and receiver panel antennas.

Technical Specifications

- **Reader Control Box**
  - 20” x 14” x 7”
  - Storage and Operating Environment
    - Temperature range of -40 to 125 °F
    - Humidity of 0-90% RH non-condensing
- **Reader Antennas**
  - 28” x 24” x 2.5”
  - Storage and Operating Environment
    - Temperature range of -40 to 125 °F
    - Humidity of 0-90% RH non-condensing

Equipment Rating

- AC input: 105-125V AC, 50-400HZ, 250W

Instructions for Use

This manual will assist you in getting the system set up and started. It provides instructions on installing the Reader Control Box, setting up the Reader Antennas, and its associated hardware, to operate the system.

Electrical Box Mounting

- The electrical control box needs to be accessible and easy to view.
- Should be on flat wall, away from water spray
- Mount with ¼ 20 x 1 inch stainless steel button head socket cap screws and hex socket nut.
- Mount control box within 6 ft of receive antenna
- Mount the box so that the WiFi antenna is up and the cable grommets are facing down.

Panel Mounting

- Secure the drive and receive antenna panels using bolts that go through the indentations in the panels. Do not drill any other section of the panels as this could cause damage to the electronics within.
- The panels must be oriented with the panel electrical box on the top left corner, when the panels are viewed from the back.

RFID Antenna Wiring Connection

Dual fixed reader will not work properly if antenna cables have been shortened.

- After the DFR panels are mounted, run the cables to the DFR electrical box. The cables must be routed so that the cows have no access to the cables.
- Run receive and drive antenna cables through separate black plastic grommets the in the bottom of the control box.
- Do not cut the cables, wind-up any excess cable inside the electrical box.
- Match labels on antenna cables to label inside control box (receive – R+, and R-. drive – D+ and D-). Secure wire to terminal.
- Tighten the grommets on the bottom of the electrical box to seal them.

Power Source Connection – see warnings on the first page

Ground wire must connect to ground lug in control box. The ground lug is marked with a ground symbol.

- Install per local electrical codes
- Run AC wire through outdoor ½ inch flexible metallic liquid tight (FMLT) conduit.
- Attach conduit to right-most metal fitting.
- AC wires; black = hot, white = neutral, green = ground.

 **Dangerous!**
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Ethernet Network Cable Connection

Run Ethernet cable into Control Box before terminating. (A RJ45 connector will not fit through the grommet).

- Use only RJ45 twisted Ethernet cabling. We recommend 8-wire, category 5 unshielded twisted-pair.
- Ethernet cable should not exceed 200 ft.
- Route un-terminated Ethernet cable into control box through grommet.
- Crimp RJ45 connector to end of cable.
- Plug RJ45 connector into Ethernet connector on the top of circuit board.
- Tighten the grommet to seal it.
- Plug computer and Dual Fixed Reader into its own RJ45 port on the switch.

Close lid on control box and tighten screws.
Put power switch in ON position.

Drive and Receive Panel Tuning

- Tune the antennas using a tuning meter and using the antenna tuning procedure.

Support

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