



IT ALL STARTS WITH TELEMETRY.

Ranch Systems is a fast-growing high-technology company focused on wireless solutions for field monitoring and control for agriculture and environmental applications.

AGRICULTURE SOLUTIONS



ALERTING

- End-user defined alerts like "temperature < 38"
- Also ability to define more complex formula for alert condition
- Alerts delivered by Email, Text Messaging, or Voice Call
- Alert text is user definable
- Multiple recipients supported
- Online site tracks confirmations received from recipients

BENEFITS

- Reduce crop losses from frost by quickly responding
- Mitigate effects of irrigation system failures by early detection
- Prevent run-out and over-fills of tanks by alerting

REMOTE CAMERAS

- Still-image colour camera attached to base stations takes color photo on motion, keypad entry (and alerts phone) or fixed time intervals
- Software maintain calendar of images and access events over time
- Image-content feature creates time series of data showing patterns of e.g. fog

BENEFITS

- Track and record-keep visual crop development over time
- Track field work from remote location
- Deter theft, increase security
- Monitor special weather conditions like visibility and fog
- Improve marketing by integrating image stream into website

WEATHER AND CLIMATE

- Broad sensor selection - Temperature, Relative Humidity, wind Speed and Direction, UV, Leaf Wetness, and other calculations (local disease, degree days, chill hours & portions, and wet bulb)
- Connected to base station or nodes sending continuous, real-time data to online software as time graph or printed as reports

BENEFITS

- Reduce water use by irrigating according to climate
- Accurately detect risks (frost and excessive heat)
- Reduce spraying by monitoring local disease indices
- Improve crop selection long term by knowing micro-climate

SOIL MOISTURE TRACKING

- Single or multi-level soil moisture probes, installed in soil, connected telemetry nodes or base station sending real-time soil moisture data to online RanchMaster software

BENEFITS

- Reduce water use by knowing water availability
- Improve crop quality by safely controlling plant stress
- Effectively and safely develop larger root system
- Reduce labor and service cost of manual collection

TANK AND POND MONITORING

- Support for submersible pressure-based water level sensors and ultrasonic non-contact fluid level sensors
- Real-time status of level and gallons currently in each tank monitored and 1-click graphs that show level or gallons over time
- Ability to define alerts when levels fall outside the criteria
- Historical reports in PDF format

BENEFITS

- Reduce risk and cost of outages
- Improve planning of delivery truck schedules
- Prevent overfills/flows
- Track water usage



IRRIGATION AND EQUIPMENT CONTROL

Valve Control

- Schedule irrigation on-line from anywhere
- Base station automatically controls valves with wireless nodes to reach remote manifolds
- Flow sensors provide feedback and alerts in case of deviations or fault.

Pump Control

- Control of a wide range of pumps from electric to large engine pumps (with Murphy Controller)
- Closed loop monitoring of actual start with alerts on failures
- Remote access technology for diagnostics and re-configuration

Engine Monitoring & Control

- Real-time telemetry & engine status current within 5-10 minutes with engine start/stop delay less than 5 secs (pre-programmed) or less than 1 minute (ad-hoc)
- Remote throttling, alerting capability
- Ability to program rules for auto start/stop based on other sensors (e.g. water level or temperature) and critical conditions (e.g. frost, low-water, soil moisture)
- Ability to integrate engine control into complete irrigation automation solution
- Still-image camera option for visual pump monitoring (optional)
- User-defined reports in CSV or PDF

BENEFITS

- Lower labor, travel, fuel, and energy costs from manual operation, and unnecessary runtime.
- Increase accuracy (e.g. smaller more frequent sets)
- Reduce water use (e.g. by night irrigation)
- Prevent pump wear and damage from dry running
- Predict and optimize refueling times by knowing exact run-times
- Auto-start based on critical conditions (frost, low-water, soil moisture)

UNITS

