



TechKISS Topic: Activity Meters

Activity meters have complex algorithms (formulas) that assess posture and activity patterns to predict a variety of events, such as whether a cow is on heat, sick or calving.

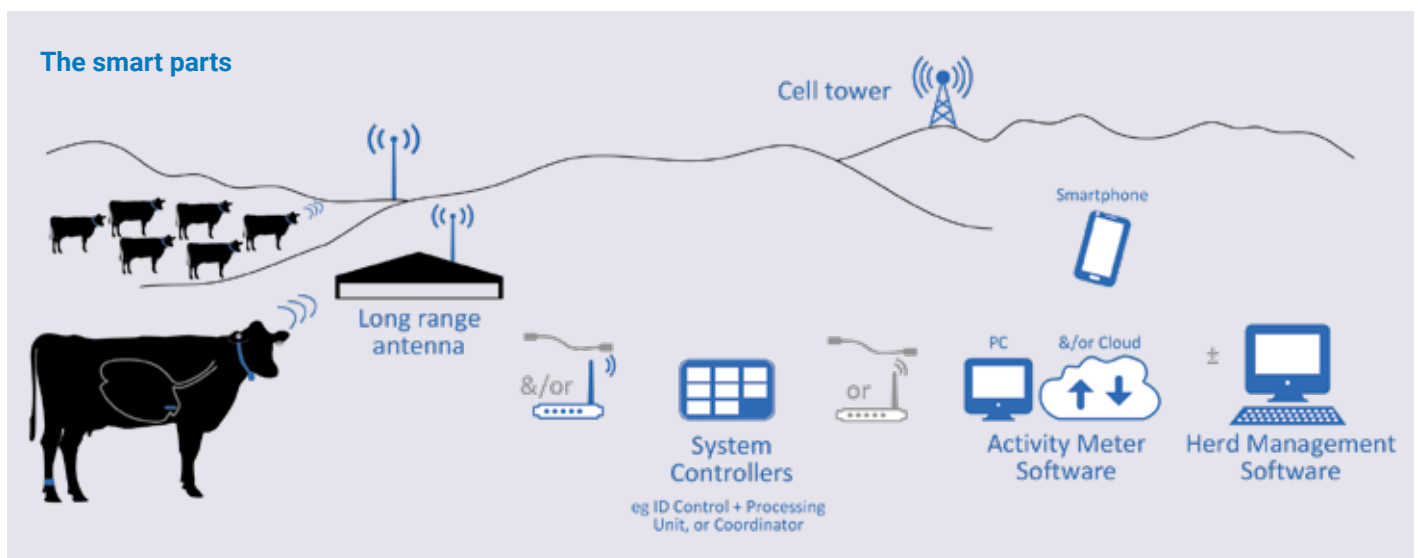
The smart parts of activity meter systems are the:

- Activity meters on individual cows that transmit radio signals (every 15-120 mins).
- A receiver (long range antenna or WiFi) that picks up and converts this to a digital signal, and sends it to a
- System controller that processes the cached data and makes it available to the
 - Activity meter software which converts the data into alerts and reports, and often includes a smartphone app so people can access anywhere.
 - Integration with Herd Management Software avoids double entry of data and makes automation easier.

“We’re finding cows we wouldn’t have picked as on heat. The person who used to just watch cows come in and go out of the dairy is now helping with cupping up.” AD

Benefits

- ▶ Reduces labour input needed for heat detection
- ▶ Improves reproductive performance of herd
- ▶ Detects sick cows early (better health outcomes)
- ▶ Reduces stress – and a way to get off farm



Tips & traps from TechKISS study farmers



Choosing activity meters

- Talk to others before buying:
 - Farmers using the product
 - Your farm consultants about the data outputs they need
 - Tech suppliers for up-to-date details
- Base your final choice on:
 - How it integrates with other tech used on the farm (now or in future)
 - The available support (“don’t just buy to a price, buy to a service”)

Other considerations:

- Decide type of activity meter (collar, ear tag, leg band, rumen bolus)
 - Typical maintenance and replacement frequency
 - Fit with farm infrastructure (such as head bales)
- Get the desired functionality such as:
 - Rumination included in algorithms
 - Cloud-based, accessible remotely
 - Use of smartphone app to enter cow-side observations
- Know the costs of this technology:
 - Estimate the likely pay-back time
 - Plan for depreciation and replacement



Integration with other tech

- Get activity meters that work with the farm’s Herd Management Software (this is a high priority with other cow management technologies such as auto-draft gates and in-line meters)



WH&S

- Have appropriate facilities for safely fitting and removing devices
- Put farm protocols in place to minimise injury when handling cows



Signal coverage across farm

- Put in antennas (and possibly repeaters) to get desired coverage
- Check that you’re not picking up radio signals from neighbouring cows
- Check firmware updates automatically via the antenna



Activity meters on cows

- Assign meters to the right cow
- Put meter on cow in appropriate position, with the correct tightness
- Have on cows for at least 7 days to generate reliable baseline data
- Regularly check cows are wearing their devices and they are working
- Store loose transponders in a steel cabinet so they are not read



Acting on alerts

- Set up so information is displayed where it’s needed (at point of milking, via smartphone app etc)
- Train farm staff so they understand outputs and know how to act on each of the different alerts



Fixing issues

- If used for heat detection, be able to fix or replace meter within 24 hours
- Be able to have software issues fixed immediately (eg by remote access)

TechKISS is a New South Wales Dairy Industry Fund project delivered by the Harris Park Group between 2018 and 2019. Project information is generic and is offered on an independent ‘as is’ basis with no guarantees of completeness or accuracy. Please seek advice before acting.

Visit NSW Department of Primary Industries for videos and Topic Sheets on the TechKISS technologies shown above, and the TechMatrix. Our thanks to the 20 technology suppliers, 141 NSW dairy farmers and 35 advisers who contributed to this project.