**Victoria’s On-Farm Internet of Things Trial**

Catalogue of Apps & Devices November 2020

Introduction

Welcome to the Catalogue of Apps & Devices.

The catalogue has been developed by the Department of Jobs, Precincts and Regions (the department) to support the On-Farm   
Internet of Things (IoT) Trial.

The catalogue contains the range of IoT technologies available to farmers under the On-Farm IoT Trial. Farmers taking part in the trial   
can select products from the catalogue to test on their farm, supported by a grant from Agriculture Victoria.

The catalogue is not intended to represent all IoT technology available on the market, or to be a list of the latest technology.   
During preparations for the On-Farm IoT Trial, Agriculture Victoria spoke to farmers and industry leaders about their experiences with digital technology. Many farmers felt that they had not had opportunities to learn about digital technology and how to reliably use it, and that this was preventing them from adopting digital technology on their farm. Farmers also told Agriculture Victoria they were overwhelmed with the amount of technology available to them. The catalogue has been developed as an aid to make it easier for farmers to choose apps & devices under the trial.

To develop the catalogue, the department carried out a market engagement process inviting IoT technology suppliers to submit a proposal for their products to be included in the On-Farm IoT Trial. Any supplier of IoT technology could make a submission. Thousands of products from dozens of suppliers were submitted for consideration. An assessment team carefully evaluated each submission to determine the list of technologies and suppliers that would be included in the catalogue.

What is Victoria’s On-Farm IoT Trial?

The trial is part of the Victorian Government’s $27 million investment in digital agriculture. The trial is supporting Victorian farms to adopt IoT and test the on-farm benefits of IoT technologies across horticulture, sheep, dairy and broadacre cropping. It will investigate issues ranging from access to a secure network connection through to how IoT can be used in the day-to-day management of a farm. Supporting farmers to capitalise on the opportunities of digital technology is important to ensure Victoria’s agriculture sector remains globally competitive as digital agriculture becomes commonplace.

If you are taking part in the trial, Agriculture Victoria will partner with you to invest in IoT technology and evaluate the impact of IoT on the performance of your farm business. You will be part of a network of up to 600 Victorian farmers around the Wellington, Buloke, Loddon, Greater Shepparton and Moira Shires each testing the benefits of IoT for their farm.

Agriculture Victoria is also funding the delivery of LoRaWAN connectivity to the trial regions in partnership with National Narrowband Network Co (NNNCo). This network will be available for participating farmers to connect to. The network will support the deployment of IoT on farms taking part in the trial. It will also provide improved connectivity and broader opportunities for digital uptake across the regions where the trial is taking place.

How to use the Catalogue of Apps & Devices

The catalogue has been designed for farmers who are eligible to apply for a grant to take part in the On-Farm IoT Trial. It is a tool to help farmers navigate and choose from the technologies available under the trial.

If you are applying for a grant under the trial, you may purchase from any supplier in this catalogue. You may purchase multiple products from multiple suppliers. Agriculture Victoria’s specialised Industry Technology Coordinators are available to help with this. You can find their contact details here.

It is important to note that prices in the catalogue are indicative only. Some products may incur additional costs such as annual subscription fees. To determine the total price of your selected Apps & Devices, you will need to obtain a quote from the suppliers you’ve chosen. Having a conversation with your selected suppliers will also help them to better understand the unique needs of your business.

LoRaWAN connectivity will be available to farmers participating in the trial. However, some products in the catalogue may incur additional 3G, 4G or NB-IoT network costs. If you select products from the catalogue with additional network costs, you can discuss this with the Industry Technology Coordinator for your trial region.

You will need to know the total cost of the Apps & Devices you’ve chosen from the catalogue and provide quotes from suppliers to finalise your application for   
grant funding.

Applicants are also encouraged to contact suppliers with any specific questions they have about products in the catalogue. Contact details for all suppliers are provided in the catalogue.

Need help?

More information for applicants is available at agriculture.vic.gov.au/digitalag.

You can also contact your trial Industry Technology Coordinator or email us at   
ag.iot@djpr.vic.gov.au for further assistance.

Your Industry Technology Coordinators

Greater Shepparton,   
Moira, Wellington Shire   
  
Andy Clark  
Agriculture Victoria, Tatura  
Mobile: 0436 804 656  
Email: ag.iot@djpr.vic.gov.au

Loddon Shire   
  
Mark Sloan  
Agriculture Victoria, Bendigo  
Mobile: 0436 833 668  
Email: ag.iot@djpr.vic.gov.au

Buloke Shire   
  
Mark Gould  
Agriculture Victoria, Horsham  
Mobile: 0448 086 059  
Email: ag.iot@djpr.vic.gov.au

IoT overview

On-farm IoT operates through common components shown in the diagram below.

The green components can be purchased from this catalogue. Depending on what technology you select, you may not need to purchase all components. Your Industry Technology Coordinator can help you if you need more information.

Sensors

Sensors collect on-farm data.

Nodes & gateways

Nodes connect one or more sensors to a gateway. Nodes are powered by batteries or solar panels.

Wireless transmission

Data from sensors is sent from the gateway via a LoRaWAN or cellular network.

Wireless receiver

Data is received by a LoRaWAN receiver or cell tower.

Internet

Receivers forward the data to a software application (app) via the internet.

Apps & dashboards

Apps and dashboards interpret the data and provide information for farmers via the internet or on a mobile device.

A guide to the catalogue

The tables on the following pages list Apps & Devices available under the On-Farm IoT Trial.

The diagram below explains the table structure used throughout the catalogue.

**1.**  Each product has a unique **catalogue number**. Please quote this number when contacting suppliers.

**2.** An **indicative price** including GST is given. Please contact suppliers for a quote with exact pricing.

**3.** **Network** type indicates if the device is supported by LoRaWAN connectivity being delivered under the trial. Other networks may incur additional charges (please speak to your Industry Technology Coordinator).

**4.**  Some devices require a **node**. Nodes are listed and priced separately under Accessories.

**5.** Some devices will require **installation**, either at additional cost ($) or included in the product price (Inc). Others can be self-installed (S).

**6.** **Software** to support your selected devices may be included in the price (Inc) or available at additional cost ($, see products listed under Software or contact suppliers for more information). Some items do not require software (N/A).

| Cat No. | Description | Supplier | Price | Network | Node required | Install options | Software |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Device category | | | | | | | |
| IoT-XXXXX | IoT Monitor (Device Name)  Connect, monitor and control IoT devices (device description).  Requires: Control module $277 (additional requirements needed to be purchased with device).  Info: https://iotinfo.com (link provided by Supplier for more information). | SupplierX | $66 per device annual fee | LoRaWAN | N | S | N/A |
| Node Required: Yes = Y, No = N | Install Options: Self Install = S, Provided at Cost = $, Installation Included = Inc. | Software: Included = Inc., Not Applicable = N/A, Additional Cost = $ | | | | | | | |

Informed agronomy

**Overview**

Informed agronomy systems assist with monitoring growing conditions such as weather, soil conditions, plant performance and plant stress. Data can be used to make more informed production decisions, such as fertiliser application rates and irrigation timing, to ensure conditions are optimised to maximise crop yield.

| Cat No. | Description | Supplier | Price | Network | Node required | Install options | Software |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Microclimate monitoring | | | | | | | |
| EE-RSF-01 | Outdoor Temp & Humidity Sensor: LoRaWAN  Measures temperature (-40-85°C +/-0.5°C) and humidity (0-100% +/-5% between 20% and 80% relative humidity).  Info: https://www.agriwan.com/product/outdoor-temp-humidity-monitor/ | AgriWAN | $330 | LoRaWAN | N | S or $ | $ |
| NB-EE-RSF-01 | Outdoor Temp & Humidity Sensor: NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/outdoor-temp-humidity-monitor/ | AgriWAN | $469 | NB-IoT | N | S or $ | $ |
| GLTMH01 | GoTempHumid – Frost Risk Sensor  Measures temperature and humidity every 10 min in any environment. Can be used for frost detection or temperature variability.  \*Includes 3 years GoApp operating costs.  Requires: GoApp (web browser, iOS or Android app) to view data (additional annual cost applies after year 3, contact Supplier). | Goanna Ag | $590\* | LoRaWAN | N | Inc. | Inc. |
| LPAR-SNiP | Photosynthetically Active Light Meter: Integrated Sensor-Node Package  For long term monitoring of canopy light interception. Can be used to optimise pruning, tree structure and plant health.  Info: http://www.ictinternational.com/products/linpar/linpar-linear-par-sensor/ | ICT International | $1365 | LoRaWAN | N | S or $ | $ |
| SQS-SNiP | Sun Calibration Quantum Sensor: Integrated Sensor-Node Package  Measures broadband light sources, such as sunlight, using an optical detector.  Info: http://www.ictinternational.com/products/snipsqs/snip-sqs/?highlight=sq110 | ICT International | $945 | LoRaWAN | N | S or $ | $ |
| SQF-SNiP | Total Light Meter: Integrated Sensor-Node Package  Measures photosynthetically active radiation under all light sources using an optical detector.  Info: http://ictinternational.com/products/snipsqf/snip-sqf/?from=/products/iot-sensors/integrated-packages-snips-plant/ | ICT International | $1347 | LoRaWAN | N | S or $ | $ |
| PUTD-PHYTOS31 | Leaf Wetness Sensor  Measures leaf wetness which can be used to identify when to spray, quantify water storage in the canopy, and monitor for foliar diseases including rust and blight.  \*Installation may incur additional cost, contact Supplier. Data can be viewed through PUTD Dashboard Device (additional cost per data set applies, see Cat No. PUTD DSS, Software).  Requires: Smart Agriculture Device Hub (Cat No. PT6000-AG01-LoRaWAN-SW, see Accessories).  Info: https://www.putd-iot.com/leaf-wetness-sensor | PUTD IOT Technology | $432 +$65 annual fee | LoRaWAN | Y | ContactSupplier\* | $\* |
| PUTD-SHT21 | Air Humidity & Temp Sensor  Measures temperature to 125°C and 100% relative humidity.  \*Installation may incur additional cost, contact Supplier. Data can be viewed through PUTD Dashboard Device (additional cost per data set applies, see Cat No. PUTD DSS, Software).  Requires: Smart Air Quality Device Hub (Cat No. PT6000-Air01-LoRaWAN-SW, see Accessories).  Info: https://www.putd-iot.com/air-humidity-temp-sensor | PUTD IOT Technology | $110 +$16 annual fee | LoRaWAN | Y | Contact Supplier\* | $\* |
| IM507D | PAR Quantum Sensor Module  Measures photosynthetically active radiation (PAR) as Photosynthetic Photon Flux Density, which has units of quanta (photons) per unit of time.  Requires: iMetos ECO D3 Base unit (Cat No. ECOD3INT, see Accessories).  Info: http://metos.at/portfolio/par-quantum/http://metos.at/hardware/ | SimplyCity | $792 | 3G/4G | Y | S or $ | Inc. |
| IM5079D | PAR Quantum Sensor Module  As above but with levelling plate and holder and 5000 mm cable.  Requires: iMetos ECO D3 Base unit (Cat No. ECOD3INT, see Accessories).  Info: http://metos.at/portfolio/par-quantum/http://metos.at/hardware/ | SimplyCity | $1001 | 3G/4G | Y | S or $ | Inc. |
| IM521CD | Pessl Instruments Leaf Wetness Sensor Module  Measures leaf wetness. With 5000 mm cable. Usually purchased as part of the Microclimate Disease Monitor (Cat No. LPWAN-DM) to run disease models.  Requires: iMetos Base (Cat No. LPWAN-BASE, see Accessories).  Info: http://metos.at/portfolio/leaf-wetness/http://metos.at/hardware/ | SimplyCity | $539 | LoRaWAN or 3G/4G | Y | S or $ | Inc. |
| LPWAN-DM | Microclimate - Disease Monitor  Compact weather station that measures Delta T, dewpoint readings, rainfall, air temperature, relative humidity and leaf wetness. Can also run multiple disease models for over 40 crops at additional cost.  Data viewed through the FieldClimate app or web portal (ng.fieldclimate.com).  Requires: Leaf Wetness Sensor to run disease models (Cat No. IM521CD).  Info: http://metos.at/hardware/ | SimplyCity | $2640+$140 annual fee | LoRaWAN | N | S or $ | Inc. |
| LPWAN-CMPLTE | Microclimate – Complete  As above but includes 12 months subscription to weather forecast and single crop disease model.  Info: http://metos.at/hardware/ | SimplyCity | $3630 | LoRaWAN | N | S or $ | Inc. |
| Microclimate & soil moisture monitoring | | | | | | | |
| ST-PK-1 | IoT MicroClimate Soil Health & Weather Monitoring: LoRaWAN  Measures wind, rainfall, temperature, humidity, solar radiation, barometric pressure, evapotranspiration, Delta T, soil moisture and temperature.  Includes 1 Davis Instruments weather station and solar power system and 2 AquaCheck 600 mm soil moisture and temperature probes.  \*Additional subscription fees may apply.  Info: https://www.agriwan.com/product/iot-micro-climate-kit/ | AgriWAN | $3999\* | LoRaWAN | N | S or $ | $ |
| NB-ST-PK-1 | IoT MicroClimate Soil Health & Weather Monitoring: NB-IoT  As above but NB-IoT compatible.  \*Additional subscription fees may apply.  Info: https://www.agriwan.com/product/iot-micro-climate-kit-nbiot/ | AgriWAN | $3699\* | NB-IoT | N | S or $ | $ |
| LPWAN-CL-SM | iMetos Climate & Soil Rain Gauge/ Air Temp & Soil Moisture: LoRaWAN  Weather station including rain gauge, air temperature/humidity, leave wetness. Can take a Sentek moisture probe. (Cat No. SE300S or SE1200S).  Data viewed through the FieldClimate app or web portal (ng.fieldclimate.com).  Info: http://metos.at/hardware/http://metos.at/hardware/ | SimplyCity | $1870 | LoRaWAN | N | S or $ | Inc. |
| Plant growth monitoring | | | | | | | |
| EE-SD-5T | Stem Dendrometer: LoRaWAN  Monitors daily changes in stem diameter. Used for irrigation scheduling/planning and monitoring plant water stress.  Info: https://www.agriwan.com/product/trunk-stem-dendrometers/ | AgriWAN | $1429 | LoRaWAN | N | S or $ | $ |
| NB-EE-SD-5T | Stem Dendrometer: NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/trunk-stem-dendrometers-nbiot/ | AgriWAN | $1579 | NB-IoT | N | S or $ | $ |
| EE-SD-10T | Trunk Dendrometer: LoRaWAN  Monitors daily changes in trunk diameter. Used for irrigation scheduling/planning and monitoring plant water stress.  Info: https://www.agriwan.com/product/trunk-stem-dendrometers/ | AgriWAN | $1429 | LoRaWAN | N | S or $ | $ |
| NB-EE-SD-10T | Trunk Dendrometer: NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/trunk-stem-dendrometers-nbiot/ | AgriWAN | $1579 | NB-IoT | N | S or $ | $ |
| DBS-SNiP | Increment Dendrometer:Integrated Sensor-Node Package (DBS60)  Measures a wide range of trunk diameters using a high resolution (0.001 mm), non-invasive sensor. Suited to stone fruit and citrus crops.  Used to monitor maximum daily stem shrinkage for irrigation management.  Info: http://www.ictinternational.com/products/dbs60-sdi-12-band-dendrometer/dbs60-sdi-12-band-dendrometer/ | ICT International | $1908 | LoRaWAN | N | S or $ | $ |
| DPS-SNiP | Stem Dendrometer: Integrated Sensor-Node Package (DPS40 Pivot Stem Dendrometer)  Measures small stems (5 mm to 40 mm) using a high-resolution pivot-based sensor. Suited to grape and berry crops.  Used to monitor maximum daily stem shrinkage for irrigation management.  Info: http://www.ictinternational.com/products/dps40/dps40-pivot-stem-dendrometer/ | ICT International | $1707 | LoRaWAN | N | S or $ | $ |
| PUTD-DD-S | Diameter Dendrometer Small  Measures plants, small trees and branches <50 mm diameter.  \*Installation may incur additional cost, contact Supplier. Data can be viewed through PUTD Dashboard Device (additional cost per data set applies, see Cat No. PUTD DSS, Software).  Requires: Smart Agriculture Device node (Cat No. PT6000-AG01-LoRaWAN-SW, see Accessories).  Info: https://www.putd-iot.com/diameter-dendrometer | PUTD IOT Technology | $760 +$114 annual fee | LoRaWAN | Y | Contact Supplier\* | $\* |
| PUTD-DC2 | Circumference Dendrometer  Measures circumference of plants >50 mm diameter.  \*Installation may incur additional cost, contact Supplier. Data can be viewed through PUTD Dashboard Device (additional cost per data set applies, see Cat No. PUTD DSS, Software).  Requires: Smart Agriculture Device node (Cat No. PT6000-AG01-LoRaWAN-SW, see Accessories).  Info: https://www.putd-iot.com/circumference-dendrometer | PUTD IOT Technology | $800 +$120 annual fee | LoRaWAN | Y | Contact Supplier\* | $\* |
| PUTD-FRUIT-DF | Fruit & Vegetable Dendrometer  Measures circumference of circular fruit, up to 110 mm diameter.  \*Installation may incur additional cost, contact Supplier. Data can be viewed through PUTD Dashboard Device (additional cost per data set applies, see Cat No. PUTD DSS, Software).  Requires: Smart Agriculture Device node (Cat No. PT6000-AG01-LoRaWAN-SW, see Accessories).  Info: https://www.putd-iot.com/fruit-n-vegetable-dendrometer | PUTD IOT Technology | $760 +$114 annual fee | LoRaWAN | Y | Contact Supplier\* | $\* |
| DN503 | Dendrometer DD-L  Measures plant growth through changes in plant diameter of 30-300 mm.  Data viewed through FieldClimate app or web portal (ng.fieldclimate.com).  Requires: Dendrometer Interface Box with IP65 Box (Cat No. DN501) and iMetos ECO D3 Base unit (Cat No. ECOD3INT). See Accessories.  Info: http://metos.at/portfolio/pessl-instruments-dendrometer/http://metos.at/hardware/ | SimplyCity | $1683 | 3G/4G | Y | S or $ | Inc. |
| DN504 | Dendrometer DD-F Fruit  Measures plant growth through changes in plant diameter.  Data viewed through FieldClimate app or web portal (ng.fieldclimate.com).  Requires: Dendrometer Interface Box with IP65 Box (Cat No. DN501) and iMetos ECO D3 Base unit (Cat No. ECOD3INT). See Accessories.  Info: http://metos.at/portfolio/pessl-instruments-dendrometer/http://metos.at/hardware/ | SimplyCity | $1683 | 3G/4G | Y | S or $ | Inc. |
| DN502 | Dendrometer DD-S  Measures plant growth through changes in plant diameter up to 50 mm.  Data viewed through FieldClimate app or web portal (ng.fieldclimate.com).  Requires: Dendrometer Interface Box with IP65 Box (Cat No. DN501) and iMetos ECO D3 Base unit (Cat No. ECOD3INT). See Accessories.  Info: http://metos.at/portfolio/pessl-instruments-dendrometer/http://metos.at/hardware/ | SimplyCity | $1683 | 3G/4G | Y | S or $ | Inc. |
| Plant stress monitoring | | | | | | | |
| EE-LT-IRM | Crop Water Stress Index Meter: LoRaWAN  Measures Crop Water Stress Index for a section of canopy or crop covers.  Info: https://www.agriwan.com/product/crop-stress-index-meter/ | AgriWAN | $1489 | LoRaWAN | N | S or $ | $ |
| NB-EE-LT-IRM | Crop Water Stress Index Meter: NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/crop-stress-index-meter-nbiot/ | AgriWAN | $1639 | NB-IoT | N | S or $ | $ |
| Soil moisture monitoring | | | | | | | |
| TRL-2YL | Soil sensor  Measures properties including soil N, P and K levels, soil moisture and pH. Permanent inground sensor.  \*Available for lease only. Price is for 2 year lease.  Info: https://agriwan.com/product/teralytic-inground-sensors-monitoring/ | AgriWAN | $1649\* | LoRaWAN | N | S or $ | $ |
| LXAQ-SM800-B24 -BN3L9A | Aquacheck Soil Moisture & Temp Probe  Measures soil moisture (capacitance based) to 800 mm, with 8 sensors  \*Includes Blue node plus 2 years subscription fees (after 2 years, subscription fee to be charged at $5.50 per month).  Requires: Blue node, included in cost.  Info: https://lx-group.com.au/product/soil-moisture-probe/ | LX | $1450\* | LoRaWAN | Y (included) | S | Inc. |
| LXEP-SM800-BN3L9A | EnviroPro Soil Moisture & Temp Probe  Measures soil moisture (capacitance based) to 800 mm, with 6 sensors.  \*Includes Blue node plus 2 years subscription fees (after 2 years, subscription fee to be charged at $5.50 per month)  Requires: Blue node, included in cost.  Info: https://lx-group.com.au/product/enviropro-soil-moisture-probe/ | LX | $1390\* | LoRaWAN | Y (included) | S | Inc. |
| A19000178SA | Soil Watcher Pro  Basic solar/battery sensor for monitoring soil moisture in paddocks and crops. Includes 3 probes at 3 different depths.  \*Includes 4 h installation, then $90 per h.  Requires: Padman Stops PAMS software (Cat No. A18000247SA, see Software).  Info: http://bit.ly/SoilWatcher\_PRO | Padman Stops | $1490 | Cat-M1 | N | Inc.\* | $ |
| IOT-KIT-00005(LoRa) | Soil Probe (1200 mm) & LoRaWAN Control Module  Measures soil moisture, salinity and temperature, with compensation for salinity and temperature variations. Suitable for all soil types.  Salinity measurements may help track the absorption of fertiliser through the root depth and alert to unfavourable groundwater conditions.  Info: https://myinsight.io/wp-content/uploads/2018/11/myinsight.io-Soil-%E2%80%93-Moisture\_Temperature\_Salinity-Kit.pdf | Powertec | $2953 +$66 annual fee | LoRaWAN | N | $ | $ |
| IOT-KIT-00006 (LTE) | Soil Probe (1200 mm)  As above but NB-IoT compatible.  Info: https://myinsight.io/wp-content/uploads/2018/11/myinsight.io-Soil-%E2%80%93-Moisture\_Temperature\_Salinity-Kit.pdf | Powertec | $2953 +$66 annual fee | NB-IoT | N | $ | $ |
| PUTD-ECH2O- EC5 | Soil Moisture Sensor (VWC)  Measures volumetric water content (VWC).  \*Installation may incur additional cost, contact Supplier. Data can be viewed through PUTD Dashboard Device (additional cost per data set applies, see Cat No. PUTD DSS, Software).  Requires: Smart Agriculture Device node (Cat No. PT6000-AG01-LoRaWAN-SW, see Accessories).  Info: https://www.putd-iot.com/soil-moisture-vwc-sensor | PUTD IOT Technology | $196 +$29 annual fee | LoRaWAN | Y | Contact Supplier\* | $\* |
| PUTD-ECH2O-5TE | Soil Triple Sensor  Measures volumetric water content, electrical conductivity and temperature.  \*Installation may incur additional cost, contact Supplier. Data can be viewed through PUTD Dashboard Device (additional cost per data set applies, see Cat No. PUTD DSS, Software).  Requires: Smart Agriculture Device node (Cat No. PT6000-AG01-LoRaWAN-SW, see Accessories).  Info: https://www.putd-iot.com/soil-triple-sensor | PUTD IOT Technology | $710 +$106 annual fee | LoRaWAN or NB-IoT | Y | Contact Supplier\* | $\* |
| PUTD-TEROS 21 | Soil Water Suction Sensor  Measures soil water suction/tension/potential (plant available water) and soil temperature.  \*Installation may incur additional cost, contact Supplier. Data can be viewed through PUTD Dashboard Device (additional cost per data set applies, see Cat No. PUTD DSS, Software).  Requires: Smart Agriculture Device node (Cat No. PT6000-AG01-LoRaWAN-SW, see Accessories).  Info: https://www.putd-iot.com/soil-water-suction-sensor | PUTD IOT Technology | $810 +$121 annual fee | LoRaWAN | Y | Contact Supplier\* | $\* |
| SE300S | Sentek Drill & Drop Triscan SDI-12 (300 mm)  Measures soil moisture, temperature and salinity at multiple depths. With 3 soil moisture, 3 salinity and 3 temperature sensors.  Data viewed through FieldClimate app or web portal (ng.fieldclimate.com).  \*Self-install requires a dedicated auger at additional cost.  Requires: iMetos Climate & Soil Rain Gauge/Air Temp/Soil Moisture: LoRaWAN enabled (Cat No. LPWAN-CL-SM).  Info: http://metos.at/portfolio/sentek-drill-drop-triscan-probe/http://metos.at/hardware/ | SimplyCity | $704 | LoRaWAN | N | S\* or $ | Inc. |
| SE1200S | Sentek Drill & Drop Triscan SDI-12 (1200 mm)  Measures soil moisture, temperature and salinity at multiple depths. With 12 soil moisture, 12 salinity and 12 temperature sensors.  Data viewed through FieldClimate app or web portal (ng.fieldclimate.com).  \*Self-install requires a dedicated auger at additional cost.  Requires: iMetos Climate & Soil Rain Gauge/Air Temp/Soil Moisture: LoRaWAN enabled (Cat No. LPWAN-CL-SM).  Info: http://metos.at/portfolio/sentek-drill-drop-triscan-probe/http://metos.at/hardware/ | SimplyCity | $2112 | LoRaWAN | N | S\* or $ | Inc. |
| Weather monitoring | | | | | | | |
| GLWEA01 | GoWeather  Weather station including solar radiation measurement every 10 min and site-specific weather forecast. No moving parts.  \*Includes 3 years GoApp operating costs.  Requires: GoApp (web browser, iOS or Android app) to view data (additional annual cost applies after year 3, contact Supplier).  Info: https://avr-iot-catalogue.s3-ap-southeast-2.amazonaws.com/GoannaAg/GoWeather.pdf | Goanna Ag | $3500\* | LoRaWAN, Cat-M1 or NB-IoT | N | Inc. | Inc. |
| GAINV01 | GoInversion  Inversion detection tower with built in automatic weather station, at 2000 mm and temperature sensor on a 10 m mast.  \*Includes 3 years GoApp operating costs.  Requires: GoApp (web browser, iOS or Android app) to view data (additional annual cost applies after year 3, contact Supplier). | Goanna Ag | $1848\* | LoRaWAN, Cat-M1 or NB-IoT | N | Inc. | Inc. |
| A41-SNiP | ATMOS-41 – Micro-Environment Weather Station: Integrated Sensor-Node Package  Measures rainfall, relative humidity, temperature, barometric pressure, vapour pressure, wind speed, wind direction and solar radiation.  Info: http://www.ictinternational.com/products/atmos-41/atmos-41-weather-station/ | ICTInternational | $3927 | LoRaWAN | N | S or $ | $ |
| LXD-WS10-B24-BN3L9A | Davis Weather Station  Measures air temperature and humidity, wind speed and direction, and rain amount in 0.2 mm increments.  \*Includes Blue node plus 2 years subscription fees (after 2 years, subscription fee to be charged at $5.50 per month)  Requires: Blue node, included in cost.  Info: https://lx-group.com.au/product/weatherstation/ | LX | $1480\* | LoRaWAN | Y(included) | S | Inc. |
| LXD-WS10-B24-BN3L9A | Davis Rain Gauge  Measures rainfall. With aluminium tipping bucket, bird spikes and filter.  \*Includes Blue node plus 2 years subscription fees (after 2 years, subscription fee to be charged at $5.50 per month).  Requires: Blue node, included in cost.  Info: https://lx-group.com.au/product/weatherstation/ | LX | $820\* | LoRaWAN | Y(included) | S | Inc. |
| IOT-KIT-00013(LoRa) | Micro Weather Station Temp/Humidity Sensor with Radiation Shield: LoRaWAN  Measures temperature and humidity which can be used to improve irrigation and crop management, identify frost conditions, and alert to conditions that might impact animals or crops. Includes a radiation shield.  Info: https://myinsight.io/wp-content/uploads/2018/11/myinsight.io-Micro-Weather-Station-%E2%80%93-Temperature-\_-Humidity-Sensor.pdf | Powertec | $1297 +$66 annual fee | LoRaWAN | N | $ | $ |
| IOT-KIT-00014 (LTE) | Micro Weather Station Temp/Humidity Sensor with Radiation Shield: NB-IoT  As above but NB-IoT compatible.  Info: https://myinsight.io/wp-content/uploads/2018/11/myinsight.io-Micro-Weather-Station-%E2%80%93-Temperature-\_-Humidity-Sensor.pdf | Powertec | $1297 +$66 annual fee | NB-IoT | N | $ | $ |
| WILD-E-R-D2 | Wildeye Weather Station  Measures wind, rain, temperature, humidity, solar radiation. Provides optional access to a range of agronomic derivations based on this data such as Growing Degree Days, Delta T, Chill Portions, Fire Danger Indices. Sends reports and alerts directly to smartphone or email.  \*Includes 2 years data, software and support.  Info: www.mywildeye.com/agviciotweatherstation | Wildeye | $2500\* | NB-IoT or Cat-M1 | N | S or $ | Inc. |
| WILD-E-RAIN | Wildeye Rain Gauge  Compact, self-emptying rain gauge. Provides access to high resolution rain data via web software and smartphone apps.  \*Includes 2 years data, software and support.  Info: www.mywildeye.com/agviciotraingauge | Wildeye | $750\* | NB-IoT or Cat-M1 | N | S or $ | Inc. |
| Node Required: Yes = Y, No = N | Install Options: Self Install = S, Provided at Cost = $, Installation Included = Inc. | Software: Included = Inc., Not Applicable = N/A, Additional Cost = $ | | | | | | | |

Pest monitoring

**Overview**

Trapping, imaging and alerting of pests can enable rapid identification of pest risk to production systems and remove the need to manually check traps, saving valuable time.

| Cat No. | Description | Supplier | Price | Network | Node required | Install options | Software |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Pest monitoring | | | | | | | |
| EE-SNP-01 | Automatic Pest Trap  Sends high resolution imagery of trap contents.  \*Includes subscription to Snaptrap portal for 1 year.  Info: https://www.agriwan.com/product/automatic-pest-trap/ | AgriWAN | $1599\* | 4G | N | S or $ | $ |
| EE-SNP-SUB1 | Snaptrap Portal Subscription  Annual subscription fee for Automatic Pest Trap (Cat No. EE-SNP-01). | AgriWAN | $399 | 4G | N | S or $ | $ |
| Node Required: Yes = Y, No = N | Install Options: Self Install = S, Provided at Cost = $, Installation Included = Inc. | Software: Included = Inc., Not Applicable = N/A, Additional Cost = $ | | | | | | | |

Farm management

**Overview**

Farm management systems assist with monitoring on-farm conditions, infrastructure, livestock, assets and safety, and can provide timely alerts if certain thresholds are met. Remote monitoring can save time and resources and help farmers respond more quickly to changing conditions, such as malfunctioning equipment or livestock health problems, to help reduce the risk of economic losses.

| Cat No. | Description | Supplier | Price | Network | Node required | Install options | Software |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Animal monitoring | | | | | | | |
| SC-100-101 | eSense Tag Flex Up Starter – ear tag  Monitors dairy cow reproductive status.  Installed with hub and extended warranty plus Starter application plan.  Info: https://www.allflex.global/au/product\_cat/dairy-cow-monitoring/ | Allflex | $30,290 per 200 head | N/A | N | Inc. | Inc. |
| SC-100-102 | eSense Tag Flex Up Advanced – ear tag  Monitors dairy cow reproductive and health status, with alerts.  Installed with hub and extended warranty plus Advanced application plan.  Info: https://www.allflex.global/au/product\_cat/dairy-cow-monitoring/ | Allflex | $34,690 per 200 head | N/A | N | Inc. | Inc. |
| SC-100-103 | eSense Tag Flex Up Premium – ear tag  As above plus includes nutrition insights and group comparisons.  Info: https://www.allflex.global/au/product\_cat/dairy-cow-monitoring/ | Allflex | $36,890 per 200 head | N/A | N | Inc. | Inc. |
| SC-100-107 | cSense Collar Flex Up Starter – collar  Monitors dairy cow reproductive status.  Installed with hub and extended warranty plus Starter application plan.  Info: https://www.allflex.global/au/product\_cat/dairy-cow-monitoring/ | Allflex | $45,194 per 200 head | N/A | N | Inc. | Inc. |
| SC-100-108 | cSense Collar Flex Up Advanced – collar  Monitors dairy cow reproductive and health status, with alerts.  Installed with hub and extended warranty plus Advanced application plan.  Info: https://www.allflex.global/au/product\_cat/dairy-cow-monitoring/ | Allflex | $50,475 per 200 head | N/A | N | Inc. | Inc. |
| SC-100-109 | cSense Collar Flex Up Premium – collar  As above plus includes nutrition insights and group comparisons.  Info: https://www.allflex.global/au/product\_cat/dairy-cow-monitoring/ | Allflex | $55,095 per 200 head | N/A | N | Inc. | Inc. |
| OXRFID2 | RFID Electronic Ear Tag  For sheep or cattle identification, counting and tracking.  Info: https://avr-iot-catalogue.s3-ap-southeast-2.amazonaws.com/FarmDeck/OXRFID2.pdf | FarmDeck | $1.80 per tag | LoRaWAN | N | S or $ | $ |
| OXRFID1 | RFID Tag Reader Module  Reads RFID electronic ear tags on sheep and cattle.  Info: https://avr-iot-catalogue.s3-ap-southeast-2.amazonaws.com/FarmDeck/OXRFID1.pdf | FarmDeck | $1084 | LoRaWAN | N | S or $ | $ |
| IOT-AT001 (LoRa) | Locations & Movement Tracking plus EID RFID Tag: LoRaWAN  Reports livestock position, which can be used to visualise routes and use of property assets such as water, feedlots and lick drops. Uses a solar panel to charge battery; expected battery life 3+ years.  Info: https://avr-iot-catalogue.s3-ap-southeast-2.amazonaws.com/PowerTec/IOT-AT001%20AgriWAN%20Eartags%20Product%20Sheet%20V1.0.pdf | Powertec | $215 +$66 annual fee | LoRaWAN | N | $ | $ |
| IOT-AT002 (LTE) | Locations & Movement Tracking plus EID RFID Tag: NB-IoT  As above but NB-IoT compatible.  Info: https://avr-iot-catalogue.s3-ap-southeast-2.amazonaws.com/PowerTec/IOT-AT001%20AgriWAN%20Eartags%20Product%20Sheet%20V1.0.pdf | Powertec | $215 +$66 annual fee | NB-IoT | N | $ | $ |
| BBET1 | Bluebell Smart Ear Tag – cattle  Measures GPS, temperature and activity data of animals at scheduled intervals (2-8 h). Battery powered, can be attached with a standard ear tag applicator and buttons. Sends data to a central network gateway on the property.  \*Includes 1 year of access to Smart Paddock Platform.  Requires: Smart Paddock Platform (Cat No. SPWEB, see Software). Internet-connected smartphone or computer is needed to access Smart Paddock Platform.  Info: https://avr-iot-catalogue.s3-ap-southeast-2.amazonaws.com/SmartPaddock/SmartPaddockProductDesc.pdf | Smart Paddock | $23,700 per 200 head\* | LoRaWAN | N | S | $ |
| BBC1 | Bluebell Smart Collar – cattle or sheep  Measures GPS, temperature and activity data of animals at scheduled intervals (1-4 h). Battery powered.  \*Includes 1 year of access to Smart Paddock Platform.  Requires: Smart Paddock Platform (Cat No. SPWEB, see Software). Internet-connected smartphone or computer is needed to access Smart Paddock Platform.  Info: https://avr-iot-catalogue.s3-ap-southeast-2.amazonaws.com/SmartPaddock/SmartPaddockProductDesc.pdf | Smart Paddock | $29,000 per 200 head\* | LoRaWAN | N | S | $ |
| Asset tracking | | | | | | | |
| OXTR1 | GPS Asset & Livestock Tracking Sensor  Tracks location and motion (real time and historical). Can be installed on assets such as motor bikes, quad bikes and tractors.  Info: https://avr-iot-catalogue.s3-ap-southeast-2.amazonaws.com/FarmDeck/OXTR1.pdf | FarmDeck | $102 | LoRaWAN | N | S or $ | $ |
| Falcon-4G | Falcon GPS Tracker - 4G  Medium sized battery operated tracker with 2 digital inputs (e.g. temperature/humidity probe or tamper switch) providing 4 locations a day with ability to change to 5 minute updates if asset is stolen. Battery life 2-3 years. Battery cost ~$14/set. Sensors not included.  Requires: GPS Boss TG-Lite tracking platform ($14.50/unit/month)  Info: https://gpsboss.com.au/trackers/ | GPSBoss | $345 | 4G or Cat-M1 | N | S | $ |
| Remora2-4G | Remora2 GPS Tracker - 4G  Heavy duty battery operated tracker providing hourly locations with ability to change to 5 minute updates if asset is stolen. Battery life 4-5 years. Battery cost ~$60/set.  Requires: GPS Boss TG-Classic tracking platform ($23.50/unit/month)  Info: https://gpsboss.com.au/trackers/ | GPSBoss | $325 | 4G or Cat-M1 | N | S | $ |
| Dart2-4G | Dart2 GPS Tracker - 4G  Hardwired unit. Perfect for utes, trucks, and tractors. Comes with 2 digital inputs to record other data. 12-24 volt systems.  Requires: GPS Boss TG-Classic tracking platform ($23.50/unit/month)  Info: https://gpsboss.com.au/trackers/ | GPSBoss | $265 | 4G or Cat-M1 | N | S | $ |
| SC-GPS-DMO | Oyster - Asset Tracking and Monitoring  Compact, weatherproof, GPS tracking device for tracking assets such as containers, trailers and skip bins. Battery powered.  Info: www.simplyfarm.net.au | SimplyCity | $226 +$6.60 per month | LoRaWAN | N | S or $ | Inc. |
| SC-GPS-DMO6 | G62 – Asset Tracking for Powered Devices  Compact, weatherproof, GPS tracking device for vehicles, includes on-device odometer and run-hours. Uses external 12 V power.  Requires: Installation by an auto electrician.  Info: www.simplyfarm.net.au | SimplyCity | $297 +$6.60 per month | LoRaWAN | N | $ | Inc. |
| Equipment automation and control | | | | | | | |
| IOT-KIT-00025 (LoRa) | Remote Activation Solid State Relay: LoRaWAN  For remote operation of 3-phase plant and equipment up to 25 A such as water pumps, motors, valves, lighting or generators.  When combined with sensors, can automate many aspects of pasture maintenance and output processing.  Info: https://myinsight.io/wp-content/uploads/2019/01/myinsight.io-3-Phase-Machine-Control-Kit.pdf | Powertec | $989 +$66 annual fee | LoRaWAN | N | $ | $ |
| IOT-KIT-00026 (LTE) | Remote Activation Solid State Relay: NB-IoT  As above but NB-IoT compatible.  Info: https://myinsight.io/wp-content/uploads/2019/01/myinsight.io-3-Phase-Machine-Control-Kit.pdf | Powertec | $989 +$66 annual fee | NB-IoT | N | $ | $ |
| Equipment monitoring | | | | | | | |
| A19000179SA | MultiWatcher Pro  Fixed solar powered unit for integrating Padman PAMS IoT network with third party sensors monitoring equipment such as grain silos and fuel tanks, milk vats and hot water services.  \*Includes 4 h installation, then $90 per h.  Requires: Padman Stops PAMS software (Cat No. A18000247SA, see Software).  Info: http://bit.ly/MultiWatcher\_PRO | Padman Stops | $1238 | Cat-M1 | N | Inc.\* | $ |
| A18000228SA | MultiController Pro  Solar/battery powered unit for integrating Padman PAMS IoT network with third party equipment such as gates, augers, VFDs, pumps, actuators, solenoids, motors.  \*Includes 4 h installation, then $90 per h.  Requires: Padman Stops PAMS software (Cat No. A18000247SA, see Software).  Info: http://bit.ly/MultiController\_PRO | Padman Stops | $1238 | Cat-M1 | N | Inc.\* | $ |
| Fence monitoring | | | | | | | |
| LXP-EF10-B24-BN3L9A | Electric Fence Monitor  Measures status and voltage of electric fence.  \*Includes Blue node plus 2 years subscription fees (after 2 years, subscription fee to be charged at $5.50 per month).  Requires: Blue node, included in cost.  Info: https://lx-group.com.au/product/electric-fence-monitor/ | LX | $990\* | LoRaWAN | Y(included) | S | Inc. |
| SC-FENCE-MCM | Security Fence Monitor, including Sensor Node LoRaWAN  Detects sagging fence wires to indicate a break.  Info: www.simplyfarm.net.au | SimplyCity | $466 +$6.60 per month | LoRaWAN | N | S or $ | Inc. |
| Fuel tank level monitoring | | | | | | | |
| GLFUL01 | GoFuel  Monitors real time fuel usage and tank volume using a pressure transducer. Fits any fuel tank.  \*Includes 3 years GoApp operating costs.  Requires: GoApp (web browser, iOS or Android app) to view data (additional annual cost applies after year 3, contact Supplier).  Info: https://avr-IoT-catalogue.s3-ap-southeast-2.amazonaws.com/GoannaAg/GoFuel.pdf | Goanna Ag | $1199\* | LoRaWAN, Cat-M1 or NB-IoT | N | Inc. | Inc. |
| Milk temperature & process equipment monitoring | | | | | | | |
| 5700001 | Halo Milk Vat, Wash & Plate Cooler Temp Monitor  Measures milk vat, plate cooler and wash temperatures. Monitors open/closed status of vat outlet.  Requires: Halo Cloud Gateway (Cat No. 5700000, see Software).  Info: https://www.daviesway.com.au/dairy-solutions/halo-farm-systems | Daviesway | $6500 | N/A | N | Inc. | $ |
| On-farm cold store monitoring | | | | | | | |
| EE-TM-HR | Critical Indoor Monitor Option 1: LoRaWAN  Monitors temperature (+/-0.2°C) and humidity (+/-2% relative humidity) at 1 min intervals. Suitable for cold storage environments.  Info: https://www.agriwan.com/product/critical-indoor-monitor/ | AgriWAN | $1099 | LoRaWAN | N | S or $ | $ |
| NB-EE-TM-HR | Critical Indoor Monitor Option 1: NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/critical-indoor-monitor-nbIoT/ | AgriWAN | $1349 | NB-IoT | N | S or $ | $ |
| EE-CLRM-01 | Critical Indoor Monitor Option 2: LoRaWAN  As for Critical Indoor Monitor Option 1 but provides measurements at 15 min intervals.  Info: https://www.agriwan.com/product/critical-indoor-monitor/ | AgriWAN | $1099 | LoRaWAN | N | S or $ | $ |
| NB-EE-CLRM-01 | Critical Indoor Monitor Option 2: NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/critical-indoor-monitor-nbIoT/ | AgriWAN | $899 | NB-IoT | N | S or $ | $ |
| R718CT | IoT Cold Store Monitoring Single (Type T): LoRaWAN  Measures temperature (+/-1°C or +/-0.75%) at 10 min intervals using a single thermocouple Type T sensor. Provides automatic logs, alerts and reports from cold storage.  Info: https://www.agriwan.com/product/IoT-cold-store-monitors/ | AgriWAN | $362 | LoRaWAN | N | S or $ | $ |
| NB-R718CT | IoT Cold Store Monitoring Single (Type T): NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/iot-cold-store-monitors-nbiot/ | AgriWAN | $519 | NB-IoT | N | S or $ | $ |
| R718CT2 | IoT Cold Store Monitoring Dual (Type T): LoRaWAN  As for the IoT Cold Store Monitoring Single (Type T) but using a dual thermocouple Type T sensor to allow monitoring at two positions.  Info: https://www.agriwan.com/product/IoT-cold-store-monitors/ | AgriWAN | $384 | LoRaWAN | N | S or $ | $ |
| NB-R718CT2 | IoT Cold Store Monitoring Dual (Type T): NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/iot-cold-store-monitors-nbiot/ | AgriWAN | $529 | NB-IoT | N | S or $ | $ |
| R718CK | IoT Cold Store Monitoring Single (Type K): LoRaWAN  Measures temperature (+/-2.2°C or +/-0.75%) at 10 min intervals using a single thermocouple Type K sensor. Provides automatic logs, alerts and reports from cold storage.  Info: https://www.agriwan.com/product/IoT-cold-store-monitors/ | AgriWAN | $329 | LoRaWAN | N | S or $ | $ |
| NB-R718CK | IoT Cold Store Monitoring Single (Type K): NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/iot-cold-store-monitors-nbiot/ | AgriWAN | $479 | NB-IoT | N | S or $ | $ |
| R718CK2 | IoT Cold Store Monitoring Dual (Type K): LoRaWAN  As for the IoT Cold Store Monitoring Single (Type K) but using a dual thermocouple Type K sensor to allow monitoring at two positions.  Info: https://www.agriwan.com/product/IoT-cold-store-monitors/ | AgriWAN | $384 | LoRaWAN | N | S or $ | $ |
| NB-R718CK2 | IoT Cold Store Monitoring Dual (Type K): NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/iot-cold-store-monitors-nbiot/ | AgriWAN | $529 | NB-IoT | N | S or $ | $ |
| EE-FPM | IoT Cold Store Monitoring, Internal Fruit Temp: LoRaWAN  Measures internal fruit temperature (+/-1°C or +/-0.75%) at 1 min intervals. Provides automatic logs, alerts and reports from cold storage.  Info: https://www.agriwan.com/product/IoT-cold-store-monitors/ | AgriWAN | $499 | LoRaWAN | N | S or $ | $ |
| NB-EE-FPM | IoT Cold Store Monitoring, Internal Fruit Temp: NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriWAN.com/product/IoT-cold-store-monitors-nbiot/ | AgriWAN | $649 | NB-IoT | N | S or $ | $ |
| Temp-I2C | Temperature Probe  I2C Temperature monitoring solution. -55 to +125C operating range, 2m Cable.  Requires: Falcon GPS Tracker – 4G  Info: https://www.digitalmatter.com/Devices/Driver-Identifiers/Temperature-Probe | GPSBoss | $74.50 | N/A | N | S | N/A |
| Pack weight recording | | | | | | | |
| EE-ADM-250 | Field Scales: LoRaWAN  In-situ wireless recording of field samples/bin weights.  Info: https://www.agriwan.com/product/field-scales/ | AgriWAN | $1099 | LoRaWAN | N | S or $ | $ |
| NB-EE-ADM-250 | Field Scales: NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/field-scales-nbiot/ | AgriWAN | $1299 | NB-IoT | N | S or $ | $ |
| Silo level monitoring | | | | | | | |
| ***Surface level monitoring products with multiple applications (water, silos, vats) can be found under Water level monitoring in Water Management.*** | | | | | | | |
| 5700005 | Halo Grain Silo Level Alert  Sends an alert when a switch, at a pre-set level within the silo, is triggered.  Requires: Halo Cloud Gateway (Cat No. 5700000, see Software).  Info: https://www.daviesway.com.au/dairy-solutions/halo-farm-systems | Daviesway | $6500 | N/A | N | Inc. | $ |
| 5700012 | Halo Grain Silo Level % & Alert  Monitors percentage at which silo is filled. Can pre-set levels to send alerts when triggered.  Requires: Halo Cloud Gateway (Cat No. 5700000, see Software).  Info: https://www.daviesway.com.au/dairy-solutions/halo-farm-systems | Daviesway | $7000 | N/A | N | Inc. | $ |
| Site security monitoring | | | | | | | |
| AGSC1 | Solar Powered IP Camera Station  High definition, solar powered internet protocol camera for remote monitoring. Can live stream water troughs, livestock or any other area of interest.  When combined with AgCloud Tag Starter Kit (Cat No. AGSK1), can be used for after-dark image capture or to trigger automatic recording.  Requires: Internet connection at a building within line of sight and <5 km away, or 4G signal.  Info: http://agcloud.com.au/AGSC1 | AgCloud | $3300 | Contact Supplier | N | S or $ | Inc. |
| AGGC1 | Grid Powered IP Camera Station  High definition, mains powered internet protocol camera for remote monitoring. Uses wireless connection; live stream can be viewed from a mobile device.  Requires: Mains powered internet connection at a building within line of sight and <5 km away, or 4G signal.  Info: http://agcloud.com.au/AGGC1 | AgCloud | $1050 | Contact Supplier | N | S or $ | Inc. |
| AGSK1 | AgCloud Tag Starter Kit  Monitors movement and magnetic field using high resolution sensors that can be buried on access roads, laneways or positioned on doorways. Can trigger SMS or email alerts or activate AgCloud cameras and flood lights to record movement and deter trespassers.  Includes one base station.  Requires: Internet connection.  Info: http://agcloud.com.au/AGSK1 | AgCloud | $1100 | Contact Supplier | N | S or $ | Inc. |
| AGTAG1 | Additional AgCloud Tag  Monitors an additional track, driveway or gate when added to the AgCloud Tag Starter Kit.  Requires: AgCloud Starter Kit (Cat No. AGSK1).  Info: http://agcloud.com.au/AGTAG1 | AgCloud | $220 | Contact Supplier | N | S or $ | Inc. |
| EE-SS-DR | Door Security Sensor: LoRaWAN  Detects open/closed status of door.  Info: https://www.agriwan.com/product/door-security-sensor-monitor/ | AgriWAN | $182 | LoRaWAN | N | S or $ | $ |
| NB-EE-SS-DR | Door Security Sensor: NB-IoT  As above but NB-IoT compatible.  Requires: NB-IoT SIM (contact Supplier).  Info: https://www.agriwan.com/product/door-security-sensor-monitor-nbIoT/ | AgriWAN | $399 | NB-IoT | N | S or $ | $ |
| EE-SS-PIR | PIR Motion Sensor: LoRaWAN  Detects motion through passive infrared. (PIR).  Info: https://www.agriwan.com/product/pir-motion-sensor-monitor/ | AgriWAN | $269 | LoRaWAN | N | S or $ | $ |
| NB-EE-SS-PIR | PIR Motion Sensor: NB-IoT  As above but NB-IoT compatible.  Requires: NB-IoT SIM card (contact Supplier).  Info: https://www.agriwan.com/product/pir-motion-sensor-monitor-nbIoT/ | AgriWAN | $469 | NB-IoT | N | S or $ | $ |
| SEC-HV-00002 | 5MP Varifocal Camera  Records high resolution video for 24/7 video surveillance. Outdoor bullet camera with motion sensing, infrared, vehicle and pedestrian tracking.  Requires: Wi-Fi/Broadband access plus network components (contact Supplier for more information).  Info: https://www.hikvision.com/au-en/products/IP-Products/Network-Cameras/Pro-Series-EasyIP-/DS-2CD2655FWD-IZS/ | Powertec | $1023 +$66 annual fee | Wi-Fi | N | $ | $ |
| SC-GATE-DMY | Guppy - Asset Monitoring  Detects gates being opened or closed and reports gate status. Suitable for both steel framed gates and wire “cocky gates”.  Info: www.simplyfarm.net.au | SimplyCity | $144 +$6.60 per month | LoRaWAN | N | S or $ | Inc. |
| Staff safety monitoring | | | | | | | |
| EE-MD | Staff Safety Sensor - Location & Fall Detection: LoRaWAN  Measures GPS location and sudden movement using accelerometer to detect falls. Includes a distress button. Sends SMS alerts to a predefined distribution list.  Info: https://www.agriwan.com/product/staff-safety-sensor/ | AgriWAN | $998 | LoRaWAN | N | S or $ | $ |
| NB-EE-MD | Staff Safety Sensor - Location & Fall Detection: NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/staff-safety-sensor-nbIoT/ | AgriWAN | $1199 | NB-IoT | N | S or $ | $ |
| EE-AIR-C2 | CO2 Sensor: LoRaWAN  Measures level of CO2 in atmosphere and alerts to non-breathable air.  Info: https://www.agriwan.com/product/co2-sensor/ | AgriWAN | $440 | LoRaWAN | N | S or $ | $ |
| NB-EE-AIR-C2 | CO2 Sensor: NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/co2-sensor-nbIoT/ | AgriWAN | $640 | NB-IoT | N | S or $ | $ |
| RXPROR4 | 4 Channel Multi-Function Key Fob  4 button programable keyfob. Can be programmed to indicate “Man Down”, “Broken Down”, “All Ok” alerts via tracker. Up to 200m radio frequency range (line of sight).  Requires: Dart2-4G  Info: https://www.rhinoco.com.au/product/RXPROR4 | GPSBoss | $129.50 | N/A | N | S | N/A |
| Node Required: Yes = Y, No = N | Install Options: Self Install = S, Provided at Cost = $, Installation Included = Inc. | Software: Included = Inc., Not Applicable = N/A, Additional Cost = $ | | | | | | | |

Water management

**Overview**

Water management systems assist with monitoring and automated control of on-farm water infrastructure. This can allow for remote monitoring and management of water use, to ensure water troughs and tanks are filled on critical high temperature days, and to provide greater visibility and control over irrigation activities to increase water efficiency.

| Cat No. | Description | Supplier | Price | Network | Node required | Install options | Software |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Bay controlling | | | | | | | |
| A18000247SA | AutoWinch Seasonal  Solar/battery powered winch for operating channel regulators and bay outlets. May be moved with the cropping season or placed permanently.  \*Includes 4 h installation, then $90 per h.  Requires: Padman Stops PAMS Web App (Cat No. A18000247SA, see Software). Suitable regulator or bay outlet gate (such as Padman outlets, iRiser, Rodney Gates or other vertical slide gates). Gate to be fitted with Padman auto-ready hand winch and bracket ($60 per outlet, includes cable).  Info: http://bit.ly/AW\_Seasonal | Padman Stops | $1738 | Cat-M1 | N | Inc.\* | $ |
| A19000180SA | AutoWinch Pro  Portable, solar/battery powered winch for operating channel regulators and bay outlets.  \*Includes 4 h installation, then $90 per h.  Requires: Padman Stops PAMS Web App (Cat No. A18000247SA, see Software). Suitable regulator or bay outlet gate (such as Padman outlets, iRiser, Rodney Gates or other vertical slide gates). Gate to be fitted with Padman auto-ready hand winch and bracket ($60 per outlet, includes cable).  Info: http://bit.ly/AW\_Pro | Padman Stops | $2475 | Cat-M1 | N | Inc.\* | $ |
| A19000181SA | EDT Pro  Portable, solar/battery powered actuator for operating smaller Padman rubber flap bay outlets.  \*Includes 4 h installation, then $90 per h.  Requires: Padman Stops PAMS Web App (Cat No. A18000247SA, see Software). Suitable regulator or bay outlet gate (such as Padman outlets, iRiser, Rodney Gates or other vertical slide gates). Gate to be fitted with Padman auto-ready hand winch and bracket ($60 per outlet, includes cable).  Info: http://bit.ly/EDT\_PRO | Padman Stops | $2475 +$83 annual fee | Cat-M1 | N | Inc.\* | $ |
| Equipment automation and control | | | | | | | |
| *For water pump remote operation see Cat No. IOT-KIT-00025 (page 36).* | | | | | | | |
| Water delivery monitoring | | | | | | | |
| EE-WTR-D1 | Water Detection Sensor: LoRaWAN  Alerts grower to arrival of water at remote section of an irrigation system by SMS or email.  Info: https://www.agriwan.com/product/water-detector-sensor/ | AgriWAN | $208 | LoRaWAN | N | S or $ | $ |
| NB-EE-WTR-D1 | Water Detection Sensor: NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/water-detector-sensor/ | AgriWAN | $499 | NB-IoT | N | S or $ | $ |
| A19000150SA | BayWatcher Pro  Portable water location sensor. Provides information on water location within flood irrigation bay, can be used for irrigation timing for contiguous irrigation bays.  \*Includes 4 h installation then $90 per h.  Requires: Padman Stops PAMS Web App (Cat No. A18000247SA, see Software).  Info: http://bit.ly/BayWatcher\_PRO | Padman Stops | $1315 | Cat-M1 | N | Inc.\* | $ |
| Water flow measuring | | | | | | | |
| EE-IFM-12 | Irrigation Flow Meter + Totaliser (12 mm): LoRaWAN  Pulse based flow meter and totaliser, for 12 mm diameter pipe.  Info: https://www.agriwan.com/product/easy-addon-pulse-based-meter/ | AgriWAN | $299 | LoRaWAN | N | S or $ | $ |
| NB-EE-IFM-12 | Irrigation Flow Meter + Totaliser (12 mm): NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/easy-addon-pulse-based-meter/ | AgriWAN | $359 | NB-IoT | N | S or $ | $ |
| EE-IFM-20 | Irrigation Flow Meter + Totaliser (20 mm): LoRaWAN  Pulse based flow meter and totaliser, for 20 mm diameter pipe.  Info: https://www.agriwan.com/product/easy-addon-pulse-based-meter/ | AgriWAN | $319 | LoRaWAN | N | S or $ | $ |
| NB-EE-IFM-20 | Irrigation Flow Meter + Totaliser (20 mm): NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/easy-addon-pulse-based-meter/ | AgriWAN | $369 | NB-IoT | N | S or $ | $ |
| EE-IFM-25 | Irrigation Flow Meter + Totaliser (25 mm): LoRaWAN  Pulse based flow meter and totaliser, for 25 mm diameter pipe.  Info: https://www.agriwan.com/product/easy-addon-pulse-based-meter/ | AgriWAN | $319 | LoRaWAN | N | S or $ | $ |
| NB-EE-IFM-25 | Irrigation Flow Meter + Totaliser (25 mm): NB-IOT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/easy-addon-pulse-based-meter/ | AgriWAN | $369 | NB-IoT | N | S or $ | $ |
| EE-IFM-50 | Irrigation Flow Meter + Totaliser (50 mm): LoRaWAN  Pulse based flow meter and totaliser, for 50 mm diameter pipe.  Info: https://www.agriwan.com/product/easy-addon-pulse-based-meter/ | AgriWAN | $459 | LoRaWAN | N | S or $ | $ |
| NB-EE-IFM-50 | Irrigation Flow Meter + Totaliser (50 mm): NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/easy-addon-pulse-based-meter/ | AgriWAN | $519 | NB-IoT | N | S or $ | $ |
| EE-IFM-90 | Irrigation Flow Meter + Totaliser (90 mm): LoRaWAN  Pulse based flow meter and totaliser, for 90 mm diameter pipe.  Info: https://www.agriwan.com/product/easy-addon-pulse-based-meter/ | AgriWAN | $539 | LoRaWAN | N | S or $ | $ |
| NB-EE-IFM-90 | Irrigation Flow Meter + Totaliser (90 mm): NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/easy-addon-pulse-based-meter/ | AgriWAN | $599 | NB-IoT | N | S or $ | $ |
| EE-IFM-100 | Irrigation Flow Meter + Totaliser (100 mm): LoRaWAN  Pulse based flow meter and totaliser, for 100 mm diameter pipe.  Info: https://www.agriwan.com/product/easy-addon-pulse-based-meter/ | AgriWAN | $799 | LoRaWAN | N | S or $ | $ |
| NB-EE-IFM-100 | Irrigation Flow Meter + Totaliser (100 mm): NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/easy-addon-pulse-based-meter/ | AgriWAN | $829 | NB-IoT | N | S or $ | $ |
| IOT-FRS001 (LoRa) | Flow Rate Sensor Kit: LoRaWAN  Measures flow state for low PSI flow rate monitoring such as drip irrigation. | Powertec | $664 +$66 annual fee | LoRaWAN | N | $ | $ |
| IOT-RFS002 (LTE) | Flow Rate Sensor Kit: NB-IoT  As above but NB-IoT compatible. | Powertec | $664 +$66 annual fee | NB-IoT | N | $ | $ |
| PUTD-TUF-2000 | Water Flowmeter Sensor  Measures liquid pressure in pipes using ultrasonic pressure sensor.  \*Installation may incur additional cost, contact Supplier. Data can be viewed through PUTD Dashboard Device (additional cost per data set applies, see Cat No. PUTD DSS, Software).  Requires: Smart Water Device Hub (Cat No. PT6000-WT-LoRaWAN-SW, see Accessories).  Info: https://www.putd-iot.com/waterflow-meter-sensor | PUTD IOT Technology | $283 +$42 annual fee | LoRaWAN | Y | ContactSupplier\* | $\* |
| SW1000 | Flow Meter Internal Interface  Required as a hub to install pressure switches/ flow meters.  Data viewed through the FieldClimate app or web portal (ng.fieldclimate.com).  Requires: Additional components, contact Supplier.  Info: http://metos.at/portfolio/pessl-instruments-water-counter/http://metos.at/hardware/ | SimplyCity | $121 | 3G/4G | Y | S or $ | Inc. |
| SW1010 | Interface Box & Electronic  For electronic pulse water meter for PI Bus connection (ARAD, Flowtronic, etc).  Requires: Additional components, contact Supplier.  Info: http://metos.at/portfolio/pessl-instruments-water-counter/http://metos.at/hardware/ | SimplyCity | $440 | 3G/4G | Y | S or $ | Inc. |
| SW1020 | Water Meter Kit with Reed Relay & Sensor Node  Multi-jet dry dial meter for irrigation and potable water. Suitable for low water quality or difficult installation, resolution 0.1-1000 litres per pulse.  Data viewed through the FieldClimate app or web portal (ng.fieldclimate.com).  Requires: Additional components, contact Supplier.  Info: http://metos.at/portfolio/pessl-instruments-water-counter/http://metos.at/hardware/ | SimplyCity | $385 | 3G/4G | Y | S or $ | Inc. |
| WGNUM20 | Numeter Digital Water Meter 20 mm  Measures water flow using ultrasonic sound waves. No moving parts, suited to raw water.  Requires: Customised software solution, contact Supplier.  Info: https://avr-iot-catalogue.s3-ap-southeast-2.amazonaws.com/WaterGroup/WG%20NUmeter%20NB-IoT%20Data%20sheet\_v2b270818.pdf | WaterGroup | $352 | NB-IoT | N | S or $ | $ |
| WGIRR 65 | Irrigation Meter 65 mm  Requires: Data logger (NB-IoT, Cat No. WGCAPTP; LoRaWAN, Cat No. WGLORA). Customised software solution, contact Supplier. | WaterGroup | $1045 | LoRaWAN or NB-IoT | N | S or $ | $ |
| WGIRR80 | Irrigation Meter 80 mm  Requires: Data logger (NB-IoT, Cat No. WGCAPTP; LoRaWAN, Cat No. WGLORA). Customised software solution, contact Supplier. | WaterGroup | $1375 | LoRaWAN or NB-IoT | N | S or $ | $ |
| WGIRR100 | Irrigation Meter 100 mm  Requires: Data logger (NB-IoT, Cat No. WGCAPTP; LoRaWAN, Cat No. WGLORA). Customised software solution, contact Supplier. | WaterGroup | $1815 | LoRaWAN or NB-IoT | N | S or $ | $ |
| WGCAPTP | Captis NB-IoT Data Logger: Retrofit Option  Logs data from sensor or meter, as often as required, and reports via email or cloud.  Requires: Customised solution, pulse enabled meter and probe (contact Supplier for more information).  Info: https://www.watergroup.com.au/nb-iot-retrofit-loggers | WaterGroup | $715 | NB-IoT | N | S or $ | $ |
| WGLORA | N-Sen LoRaWAN Meter Data Logger: Retrofit Option  Logs data from sensor or meter, as often as required, and reports via email or cloud.  Requires: Customised solution, pulse enabled meter and probe (contact Supplier for more information).  Info: https://avr-iot-catalogue.s3-ap-southeast-2.amazonaws.com/WaterGroup/WG%20LoRaWAN%20ELT-2%20Datasheet.pdf | WaterGroup | $429 | LoRaWAN | N | S or $ | $ |
| Water level monitoring | | | | | | | |
| EE-WTR-DP | Water Tank Submersible Level Sensor: LoRaWAN  Measures water tank levels in tanks, dams and troughs.  Info: https://www.agriwan.com/product/water-tank-level/ | AgriWAN | $935 | LoRaWAN | N | S or $ | $ |
| NB-EE-WTR-DP | Water Tank Submersible Level Sensor: NB-IoT  As above but NB-IoT compatible.  Info: https://www.agriwan.com/product/water-tank-level/ | AgriWAN | $1399 | NB-IoT | N | S or $ | $ |
| LS1-CEL-U5 | Waterwatch LS1 – Water Level Monitor - Cellular M/NB-IoT - Internal Antenna  Measures any water level, such as tank, trough, irrigation channel using ultrasound (range 5000 mm).  Web-based app enables email/SMS alerts for water level and/or rate of change.  Info: https://www.automationgroup.com.au/waterwatch.html | Automation Group | $963 +$106 annual fee | Cat-M1/NB-IoT | N | S or $ | $ |
| 5700014 | Halo Water Tank Level Sensing  Monitors water tank level by volume. Alerts can be set at programmable levels.  Requires: Halo Cloud Gateway (Cat No. 5700000, see Software).  Info: https://www.daviesway.com.au/dairy-solutions/halo-farm-systems | Daviesway | $7000 | N/A | N | Inc. | $ |
| OXDL1 | Dam and Trough Water Level Sensor  Provides historical and real-time water level measurement for troughs, dams or turkey nests.  Info: https://avr-iot-catalogue.s3-ap-southeast-2.amazonaws.com/FarmDeck/OXWT1.pdf | FarmDeck | $476 | LoRaWAN | N | S or $ | $ |
| OXWT1 | Tank Water Level Sensor  Provides historical and real time information on water levels and detects water leaks.  Info: https://avr-iot-catalogue.s3-ap-southeast-2.amazonaws.com/FarmDeck/OXWT1.pdf | FarmDeck | $476 | LoRaWAN | N | S or $ | $ |
| GLTNK01 | GoTank  Tracks real time water volume and usage using pressure transducer. Fits any enclosed water tank.  \*Includes 3 years GoApp operating costs.  Requires: GoApp (web browser, iOS or Android app) to view data (additional annual cost applies after year 3, contact Supplier).  Info: https://avr-iot-catalogue.s3-ap-southeast-2.amazonaws.com/GoannaAg/GoTank.pdf | Goanna Ag | $1095\* | LoRaWAN, Cat-M1 or NB-IoT | N | Inc. | Inc. |
| GLSTO02 | GoStorage  Monitors height and volume of water storage unit using either radar or pressure transducer technology (depending on storage type).  \*Includes 3 years GoApp operating costs.  Requires: GoApp (web browser, iOS or Android app) to view data (additional annual cost applies after year 3, contact Supplier).  Info: https://avr-iot-catalogue.s3-ap-southeast-2.amazonaws.com/GoannaAg/GoStorage.pdf | Goanna Ag | $2530\* | LoRaWAN | N | Inc. | Inc. |
| LXSE-SS634-B24-BN3L9A | Level Sensing: Immersion Pressure Probe  Measures water pressure to estimate level or depth of tank or bore, 4-20mA output pressure.  \*Includes Blue node plus 2 years subscription fees (after 2 years, subscription fee to be charged at $5.50 per month).  Requires: Blue node, included in cost.  Info: https://lx-group.com.au/product/pressure-sensor/ | LX | $780\* | LoRaWAN | Y(included) | S | Inc. |
| LXMB-10-B24-BN3L9A | Ultrasonic Level Sensor  Measures distance to surface level up to 10m to estimate capacity of water tanks and dams. Can also be used in grain silos.  \*Includes Blue node plus 2 years subscription fees (after 2 years, subscription fee to be charged at $5.50 per month).  Requires: Blue node, included in cost.  Info: https://lx-group.com.au/product/ultrasonic-distance-sensor-5m/ | LX | $880\* | LoRaWAN | Y(included) | S | Inc. |
| A19000148SA | WaterWatcher Pro  Fixed solar powered unit for integrating Padman PAMS IoT Network with third party sensors to measure water levels (eg. dams, tanks, channels).  \*Includes 4 h installation, then $90 per h.  Requires: Padman Stops PAMS software (Cat No.A18000247SA, see Software).  Info: http://bit.ly/Waterwatcher\_PRO | Padman Stops | $1557 | Cat-M1 | N | Inc.\* | $ |
| IOT-KIT-00034(LoRa) | Ultrasonic Level Displacement Sensor Kit: LoRaWAN  Measures distance to water surface (tanks, creeks, water troughs). Can also be used for storage levels (grain silos, vats) and snow depth.  Info: https://myinsight.io/wp-content/uploads/2019/01/myinsight.io-Level-Displacement-Sensor-Ultrasonic-Kit-Brochure.pdf | Powertec | $1309+$66 annual fee | LoRaWAN | N | $ | $ |
| IOT-KIT-00035 (LTE) | Ultrasonic Level Displacement Sensor Kit: NB-IoT  As above but NB-IoT compatible.  Info: https://myinsight.io/wp-content/uploads/2019/01/myinsight.io-Level-Displacement-Sensor-Ultrasonic-Kit-Brochure.pdf | Powertec | $1309+$66 annual fee | NB-IoT | N | $ | $ |
| IOT-KIT-00037(LoRa) | Ultrasonic Level Displacement Sensor Kit (Chemical Safe): LoRaWAN  As per previous item but chemical safe, which can allow use in some hazardous chemical environments.  Info: https://myinsight.io/wp-content/uploads/2019/01/myinsight.io-Level-Displacement-Sensor-Ultrasonic-Kit-Brochure.pdf | Powertec | $1527+$66 annual fee | LoRaWAN | N | $ | $ |
| IOT-KIT-00038 (LTE) | Ultrasonic Level Displacement Sensor Kit (Chemical Safe): NB-IoT  As above but NB-IoT compatible.  Info: https://myinsight.io/wp-content/uploads/2019/01/myinsight.io-Level-Displacement-Sensor-Ultrasonic-Kit-Brochure.pdf | Powertec | $1527+$66 annual fee | NB-IoT | N | $ | $ |
| IOT-KIT-00040(LoRa) | Liquid Level & Pressure Sensor Kit (Chemical Safe): LoRaWAN  Measures level and pressure, temperature and electrical conductivity. Suitable for bore hole and reservoir level monitoring, water mains pressure measurement in inspection chambers, power level and outlet pressure measurement on submersible pumps.  Info: https://myinsight.io/wp-content/uploads/2019/01/myinsight.io-Level-Sensor-Transducer-Kit-Internal.pdf | Powertec | $2500+$66annual fee | LoRaWAN | N | $ | $ |
| IOT-KIT-00041 (LTE) | Liquid Level & Pressure Sensor Kit (Chemical Safe): NB-IoT  As above but NB-IoT compatible.  Info: https://myinsight.io/wp-content/uploads/2019/01/myinsight.io-Level-Sensor-Transducer-Kit-Internal.pdf | Powertec | $2500+$66annual fee | NB-IoT | N | $ | $ |
| PUTD-JYB-KO-L | Liquid/Water Level Sensor  Measures liquid levels, based on pressure, up to 50 m.  \*Installation may incur additional cost, contact Supplier. Data can be viewed through PUTD Dashboard Device (additional cost per data set applies, see Cat No. PUTD DSS, Software).  Requires: Smart Water Device Hub (Cat No. PT6000-WT-LoRaWAN-SW, see Accessories).  Info: https://www.putd-iot.com/liquid-water-level-sensor | PUTD IOT Technology | $272 +$38 annual fee | LoRaWAN | Y | Contact Supplier\* | $\* |
| Water pressure monitoring | | | | | | | |
| 5700013 | Halo Water Pump Monitoring  Monitors pressure and determines volume from pulse output water meter. Alerts can be set based on pressure and flow.  Requires: Halo Cloud Gateway (Cat No. 5700000, see Software). Pulse output water flow meter (contact Supplier).  Info: https://www.daviesway.com.au/dairy-solutions/halo-farm-systems | Daviesway | $8500 | N/A | N | Inc. | $ |
| PTD2-L | Pressure & Temp Sensor  Measures pressure and temperature of water and gas pipes and water, diesel, chemicals and gas storage tanks.  Info: https://www.ellenex.com/lorawan-pressure-temp-transmitter | Ellenex | $600 | LoRaWAN | N | $ | Inc. |
| PS100 | Pressure Switch Electronic  Includes 5000 mm flat connector, IP65 Box and stainless steel holder.  Requires: Base Station (Cat No. LPWAN-Base, see Accessories).  Info: http://metos.at/hardware/ | SimplyCity | $231 | LoRaWANor 3G/4G | Y | S or $ | Inc. |
| PS011 | Pressure Switch  Adjustable from 0-2 bar.  Requires: Base Station (Cat No. LPWAN-Base, see Accessories).  Info: http://metos.at/hardware/ | SimplyCity | $154 | LoRaWAN or 3G/4G | Y | S or $ | Inc. |
| PS010ICA | Pressure Switch  Adjustable from 1-10 bar with 5000 mm cable.  Requires: Base Station (Cat No. LPWAN-Base, see Accessories).  Info: http://metos.at/hardware/ | SimplyCity | $154 | LoRaWAN or 3G/4G | Y | S or $ | Inc. |
| Water quality | | | | | | | |
| PUTD-SE615 | Water Conductivity Sensor  Measures water quality and temperature by tracking conductivity.  \*Installation may incur additional cost, contact Supplier. Data can be viewed through PUTD Dashboard Device (additional cost per data set applies, see Cat No. PUTD DSS, Software).  Requires: SSmart Water Device Hub (Cat No. PT6000-WT-LoRaWAN-SW, see Accessories).  Info: https://www.putd-iot.com/water-conductivity-sensor | PUTD IOT Technology | $1738 + $261 annual fee | LoRaWAN | Y | Contact Supplier\* | $\* |
| PH501 | Pessl Instruments pH Sensor Module  Measures pH of aqueous solutions.  Data viewed through the FieldClimate app or web portal (ng.fieldclimate.com).  Requires: ECO D3 iMetos Base Unit and Interface Box Module (Cat No. ECOD3INT and Cat No. EC500PH, see Accessories).  Info: http://metos.at/portfolio/ph-sensor/http://metos.at/hardware/ | SimplyCity | $660 | 3G/4G | Y | S or $ | Inc. |
| EC501 | Pessl Instruments EC Sensor Module  Measures electrical conductivity (EC), to estimate salinity, and temperature using a thermistor.  Data viewed through the FieldClimate app or web portal (ng.fieldclimate.com).  Requires: ECO D3 iMetos Base Unit and Interface Box Module (Cat No. ECOD3INT and Cat No. EC500PH, see Accessories).  Info: http://metos.at/portfolio/electrical-conductivity/http://metos.at/hardware/ | SimplyCity | $616 | 3G/4G | Y | S or $ | Inc. |
| Node Required: Yes = Y, No = N | Install Options: Self Install = S, Provided at Cost = $, Installation Included = Inc. | Software: Included = Inc., Not Applicable = N/A, Additional Cost = $ | | | | | | | |

Software

**Overview**

This section contains software unique to each Supplier. Software for devices in the catalogue with “$” in the software column is listed here. If it is not, please contact the Supplier for more information. Your Industry Technology Coordinator can also help you determine if you need to purchase software for your selected devices.

| Cat No. | Description | Supplier | Price | Installoptions |
| --- | --- | --- | --- | --- |
| Software | | | | |
| EE-PPS-LITE | Precision Lite - Decision Support Software  Displays data from on-farm weather stations or modelled data. Calculates crop corrected evapotranspiration (ETc) based on farm satellite mapping and farm water balance forecast.  \*Per device pricing capped at 10 devices (no additional fee after the first 10 devices).  Info: https://www.agriwan.com/product/decision-support-software/ | AgriWAN | $158 per device per year\* | Inc. |
| EE-PPS-PLUS | Precision Plus - Decision Support Software  As above plus also includes soil monitoring (moisture, temperature and electrical conductivity (EC)), frost monitoring, irrigation pump and flow monitoring, water balance tracking and 7-day irrigation scheduling forecast.  \*Per device pricing capped at 15 devices (no additional fee after the first 15 devices).  Info: https://www.agriwan.com/product/decision-support-software/ | AgriWAN | $238 per device per year\* | Inc. |
| EE-PPS-PRO | Precision Pro - Decision Support Software  As previous plus also includes crop health monitoring and 14-day irrigation planning via dendrometers, sap flow sensors or crop water stress meters.  \*Per device pricing capped at 20 devices (no additional fee after the first 20 devices).  Info: https://www.agriwan.com/product/decision-support-software/ | AgriWAN | $291 per device per year\* | Inc. |
| 5700000 | Halo Cloud Gateway & Software  Gateway for uploading data to the cloud. Includes dashboard for farm monitoring.  One gateway required per farm; each gateway can handle up to 1000 sensors. Required for Halo products.  Info: https://www.daviesway.com.au/dairy-solutions/halo-farm-systems | Daviesway | $5800 +$1200 annual fee | Inc. |
| ESP-2 | Ellenex Software Platform  Allows farmers to visualise data, set alarms and notifications, and manage devices.  Info: www.ellenex.com | Ellenex | $92 per year | Inc. |
| FarmDeck | Farm Management Application  Allows management of tasks such as farm maps, livestock and paddock management, planning, reporting, audits. Runs on smartphone, tablet or computer.  \*Price for basic plan, will vary based on number of devices.  Info: https://avr-iot-catalogue.s3-ap-southeast-2.amazonaws.com/FarmDeck/Farmdeck.pdf | FarmDeck | $220 monthly for up to 20 devices\* | S |
| Dataview | Dataview Application  Web-based data visualisation service for ICT International IoT nodes.  Info: http://www.ictinternational.com/products/online-data-visualisation/dataview-web/ | ICT International | $250 per site per year | Inc. |
| A18000247SA | PAMS  Web-based software for linking Padman IoT components.Required for all Padman Stops hardware.  \*Includes 4 h installation, then $90 per h.  Info: http://bit.ly/PadmanIoT | Padman Stops | $83 per device per year | Inc.\* |
| IOT-SERV-00001 | Mysight.io  Collects and collates IoT data and presents in a dashboard. For connecting, monitoring and controlling IoT devices.  Requires: Control Module $277 (contact Supplier for more information).  Info: https://myinsight.io/dashboard/https://myinsight.io/wp-content/uploads/pdf/Aboutmyinsightio.pdf | Powertec | $66 per device per year | S |
| PUTD DSS | Dashboard Device Management & Automation for Farm  Plots data from IoT devices onto dashboard in graph form and maps device locations. Alarms can be set to alert on thresholds.  Info: https://www.putd-iot.com/dashboard-device-management | PUTD IOT Technology | $3 per data set per month | Inc. |
| SPWEB | Smart Paddock Platform  Maps paddock with herd location and status. User can view last reported location, activity status, temperature, and movement history via a heat map or path of individual animals.  Required for Smart Paddock devices. | Smart Paddock | $1.10 per collar/tag per month (after year 1) | S |
| WGMON | WaterGroup Dashboard Device Data Monitoring  Platform allows setting of alarms to manage and monitor water usage and identify leaks more rapidly. | WaterGroup | LoRaWAN: $500 +$80 per device per year (for portal access)  NB-IoT: $500 +$132 per device per year (for portal and network access) | $ |
| Install Options: Self Install = S, Provided at Cost = $, Installation Included = Inc. | | | | |

Accessories

This section contains items required for your Apps & Devices to work. If the devices you have selected specify additional requirements in the device description, the additional items you will need to purchase for your devices will be listed here. Please contact the Supplier or your Industry Technology Coordinator for further information on specific device requirements.

| Cat No. | Description | Supplier | Price | Network | Installoptions |
| --- | --- | --- | --- | --- | --- |
| Communication node | | | | | |
| PT6000-WT-LoRaWAN-SW | Smart Water Device Hub  Connects PUTD Water Sensors to LoRaWAN. May support more than one sensor; contact Supplier.  \*Installation may incur additional cost, contact Supplier.  Info: https://www.putd-iot.com/smart-water-device-hub | PUTD IOT Technology | $1120 +$168 annual fee | LoRaWAN | Contact Supplier\* |
| PT6000-Air01-LoRaWAN-SW | Smart Air Quality Device Hub  Connects PUTD Air Sensors to LoRaWAN. May support more than one sensor; contact Supplier.  \*Installation may incur additional cost, contact Supplier.  Info: https://www.putd-iot.com/smart-air-quality-device-hub | PUTD IOT Technology | $1120 +$168 annual fee | LoRaWAN | Contact Supplier\* |
| PT6000-AG01-LoRaWAN-SW | Smart Agriculture Device Hub  Connects PUTD agriculture sensors to LoRaWAN. May support more than one sensor; contact Supplier.  \*Installation may incur additional cost, contact Supplier.  Info: https://www.putd-iot.com/smart-agriculture-device-hub | PUTD IOT Technology | $1120 +$168 annual fee | LoRaWAN | Contact Supplier\* |
| ECOD3INT | iMetos ECO D3 Base Unit  Utilised for sensors that need a cellular interface.  Required for EC Sensor Module and pH Sensor Module (Cat No. EC501 and Cat No. PH501, see Water Management).  Can have multiple sensors added (sold separately).  Data viewed through the FieldClimate App or web portal (ng.fieldclimate.com).  Info: http://metos.at/hardware/ | SimplyCity | $1045 | 3G/4G | S or $ |
| LPWAN- Base | iMetos Base  Required for sensors that need a LoRaWAN/NB-IoT interface.  Can have multiple sensors added (sold separately).  Data viewed through the FieldClimate App or web portal (ng.fieldclimate.com).  Info: http://metos.at/hardware/ | SimplyCity | $990 | LoRaWAN, Wi-Fi or NB-IoT | S or $ |
| Interface | | | | | |
| EC500PH | Pessl Instruments EC & pH Interface Box Module with Display  Connects to iMetos ECO D3 Base Unit (Cat No. ECOD3INT).  Required for EC Sensor Module and pH Sensor Module (Cat No. EC501 and Cat No. PH501, see Water Management).  Info: http://metos.at/hardware/ | SimplyCity | $836 | 3G/4G | S or $ |
| SEN-SDI13 | External SDI-12 Interface  For 2 Sentek probes. With battery and solar panel. Required to add Sentek probe to a station (if not provided as a package).  Info: http://metos.at/hardware/ | SimplyCity | $803 | LoRaWAN or 3G/4G | S or $ |
| DN501 | Dendrometer Interface Box with IP65 Box  Connects to SimplyCity dendrometers.  Required for Dendrometer DD-L and Dendrometer DD-F Fruit (Cat No. DN503 and Cat No. DN504, see Informed Agronomy).  Info: http://metos.at/portfolio/pessl-instruments-dendrometer/http://metos.at/hardware/ | SimplyCity | $506 | 3G/4G | S or $ |
| Install Options: Self Install = S, Provided at Cost = $, Installation Included = Inc. | | | | | |

Supplier contact details

| Supplier | Contact number | Email | Website |
| --- | --- | --- | --- |
| AgCloud | 0417 560 231 (Grant Sutton) | info@agcloud.com.au | www.agcloud.com.au |
| AgriWAN | 1300 781 739 | sales@agriwan.com | www.agriwan.com |
| Allflex | 0429 333 418 (John Leddin) | john.leddin@allflex.com.au | https://www.allflex.global/au/ |
| Automation Group | 1300 724 743 0409 776 643 (Ken Moyney) | sales@automationgroup.com.au | www.automationgroup.com.au |
| Daviesway | Use email provided | info@daviesway.com.au | www.daviesway.com.au |
| Ellenex | (03) 9010 6083 | sales@ellenex.com | www.ellenex.com |
| FarmDeck | (02) 8879 3850 | sales@farmdeck.com | www.farmdeck.com |
| Goanna Ag | 0436 642 920 (David Robson) | drobson@goannaag.com.au | www.goannaag.com.au |
| GPSBoss | 1300 857 971 0439 300 958 (Richard Mason) | theboss@theGPSboss.com.au | https://gpsboss.com.au/ |
| ICT International | (02) 6772 6770 | sales@ictinternational.com.au | www.ictinternational.com.au |
| LX | (02) 9209 4133 | info@lx-group.com.au | www.lx-group.com.au |
| Padman Stops | 0448 097 308 (Grant Oswald) | grant@padmanstops.com.au | www.padmanstops.com.au |
| Powertec | (07) 5577 0500 | sales@powertec.com.au | www.powertec.com.au |
| PUTD IOT Technology | (03) 8375 0859 0449 601 229 (Queenie Zhang) | admin@putd-iot.com | www.putd-iot.com |
| Simply City | 0414 729 907 (Chris Hollier) | chris@simplycity.net.au | www.simplycity.net.au www.simplyfarm.net.au |
| Smart Paddock | 0448 252 916 | hello@smartpaddock.com | www.SmartPaddock.com |
| WaterGroup | (02) 9499 8795 | water@watergroup.com.au | www.watergroup.com.au |
| Wildeye | 1300wildeye (1300 945 339) | info@mywildeye.com | www.outpostcentral.com |

Disclaimer   
This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. While every effort has been made to ensure the currency, accuracy or completeness of the content we endeavour to keep the content relevant and up to date and reserve the right to make changes as require. The Victorian Government, authors and presenters do not accept any liability to any person for the information (or the use of the information) which is provided or referred to in the report.

Unless indicated otherwise, this work is made available under the terms of the Creative Commons Attribution 3.0 Australia licence. To view a copy of this licence, visit creativecommons.org/licenses/by/3.0/au. It is a condition of this Creative Commons Attribution 3.0 Licence that you must give credit to the original author who is the State of Victoria.

If you would like to receive this publication in an   
accessible format, such as large print or audio, email   
ag.iot@djpr.vic.gov.au. This document is also available in PDF and Word format at www.agriculture.vic.gov.au/digitalag

ISBN 978-1-76090-188-2 (Print)  
ISBN 978-1-76090-189-9 (PDF/online/MS word)