

Notes on Brown Hills AWS

Sensors and equipment provided by:

- Ian Hawes, NIWA
- Megan Balks, University of Waikato
- Allan Green, University of Waikato
- Antarctica New Zealand

Contact: Shulamit Gordon at s.gordon@antarcticanz.govt.nz

Location: S79 50.113, E159 19.122

Installed: 16 November 2004

Recording:

- Wind direction and wind speed at 3m above ground level (NIWA)
- Temperature and relative humidity at 3m above ground level (NIWA)
- Global radiation and reflected radiance at 2m above ground level (NIWA)
- 3 x soil temperature sensors at 5cm, 10cm and 20cm depth (NIWA)
- 3 x PAR light sensors at soil surface level. Located approx underneath the radiation/radiance sensors (Allan Green, University Waikato).
- 3 x soil conductivity sensors at soil surface. Located approx underneath the radiation/radiance sensors (Megan balks, University Waikato).

Logging: CR10X data logger recording to 16Mb memory module. Sensors read every minute and averaged every hour (changed in Dec 2009 – see below).



Downloaded:

Date	Person	Notes
28 December 2005	Ian Hawes, NIWA	1 solar panels damaged, but battery power still good. Removed damaged panel. Could only download first 3 months of data as didn't have suitable interface to make connection between laptop and logger. In future need to just swap loggers out.
28 December 2007	Mark Gall, NIWA	Repaired and downloaded.
27 January 2008	Mark Gall, NIWA	Downloaded
December 2009	Ian Hawes, NIWA	Memory module switched out. Changed programme to record met parameters as average every hour (rather than 15 mins) and the soil data every day in winter and every 12h in summer. Re-written the programme accordingly, and put in a section that will put the unit to sleep if the battery goes below 10.5 V and come on again when it recovers. That will allow the station to continue to record for much longer before it begins to over-write. >2 years of data will stay on the logger and maybe a decade on the memory module.
12 January 2012	Shane Buckham (SB Winter Over Tech Support)	Downloaded memory module. Installed newer batteries. Tightened cross mast which was a bit loose.

Additional Notes:

May 2011: Bob Noonan and Ian Hawes.

Investigation into wind speed readings.

When compared to the wind speed at Lower Darwin, the wind speed at Brown Hills appeared to be significantly lower. Ian Hawes reviewed the datalogger program and found that a parameter in the wind speed instruction was incorrect. Until the program can be changed, the speed needs to be multiplied by a factor of 10.

Investigation into the time zone of the station

After reviewing the solar radiation data it would appear that the station is set to GMT+0.

Data Storage:

Data is stored in two places:

1. On Sharepoint under Antarctic Operations>Science Support>Experiments>K702 Dawin AWS. Use 'Data' in the metadata to separate it from 'Instructions'
2. Uploaded to the LGP Website at: <http://www.lgp.aq/article/6341.html#8809>. This site is now static and E2 Media will have to upload the data. Contact the Ant NZ Science Advisor in the first instance to initiate this upload with E2 Media.

Once new data is on line – Science Advisor should email the LGP community to let them know it's there.