**HAZELRIGG: Campbell Scientific Automatic Weather Stations**

1. Main Hazelrigg meteorological enclosure, GR 493 578, c. 95m asl.
2. New enclosure, GR 490 579, c.85m asl (just across the motorway from the N end of Campus).

Wind turbine is between the two sites at GR 492 578.

The data are all 10 minute averages (or totals) and the columns are:

**Station A:**

E - Temperature (°C) (measured by temp/RH sensor in Stevenson Screen)  
F - Relative Humidity (%) in Stevenson Screen  
G - Solar irradiation: 10 min average (kW/m2)

H - Solar irradiation: 10 min total (kJ/m2)  
I, J - Sunshine duration (minutes, seconds)  
K - Air temperature in Stevenson Screen (°C)  
L - Concrete temperature (°C)

M - Grass temperature (°C)  
N, O, P, Q, R, S - Soil temperatures at 5, 10, 20, 30, 50, 100cm (°C)  
T, U, V, W - Sonic Anemometer (wind speed in 3 planes)

Y - Windspeed at 10m on mast (m/s)  
Z - Wind direction at 10m on mast (degrees)  
AA - Rainfall 10 min total (mm)  
AB - Air Pressure (mbar)

**Station B:**

E - Temperature (°C) (measured by temp/RH sensor in Stevenson Screen)  
F - Relative Humidity (%) in Stevenson Screen  
G - Total Solar irradiation: 10 min average (W/m2)

H - Diffuse Solar irradiation: 10 min average (W/m2)

I, J (Not installed)  
K - Air temperature in Stevenson Screen (°C)  
L - Concrete temperature (°C)

M - Grass temperature (°C)  
N, O, P, Q, R, S - Soil temperatures at 5, 10, 20, 30, 50, 100cm (°C)  
T - Windspeed at 10m on mast (m/s)

U - Wind direction at 10m on mast (degrees)  
V - Rainfall 10 min total (mm)  
W - Air Pressure (mbar)

The rest - present weather sensor, eg gives type, size, amounts of precipitation, visibility...

<http://s.campbellsci.com/documents/eu/manuals/pws100.pdf>

X-AC - Date & time

AD - Average visibility (m)

AE - Present weather code (WMO)

AF, AG, AH - Present weather codes (METAR)

AI - Precipitation intensity (mm/hr)

AJ - Precipitation accumulation (mm)

AK - Precipitation average velocity (m/s)

AL - Precipitation average size (mm)

AM onwards - Precipitation types

AV onwards - Errors, alarms, battery etc.

Present weather sensor: [https://www.campbellsci.co.uk/pws100](https://www.campbellsci.co.uk/pws100%20)

Temp/RH sensors: <https://www.campbellsci.co.uk/hmp155a-overview>

All other temperatures: <https://www.campbellsci.co.uk/107>

Pressure: <https://www.campbellsci.co.uk/cs106>

Rainfall: <https://www.campbellsci.co.uk/arg100>

Solar Radiation (A): <https://www.campbellsci.co.uk/lp02>

Sunshine Duration (A): <https://www.campbellsci.co.uk/csd3>

Solar Radiation (Total/Diffuse)  (B): <http://www.delta-t.co.uk/product-display.asp?id=SPN1%20Product&div=Meteorology%20and%20Solar>

Wind Speed: <https://www.campbellsci.co.uk/a100lk>

and Direction: <https://www.campbellsci.co.uk/w200p>

Old enclosure

logger name: **CCSL006413\_A** Baud rate **38400** PakBus **1**

programmes: **CCSL006413\_A\_220218.CR1** & **CCSL006413\_A\_021013.tdf**

files: **CCSL006413\_A\_Ten\_Min.dat** & **CCSL006413\_A\_Daily.dat**

New enclosure

logger name: **CCSL006413\_B** Baud rate **38400** PakBus **2**

programmes: **CCSL006413\_B\_220218.CR1** & **CCSL006413\_B.tdf**

files: **CCSL006413\_B\_Ten\_Min.dat** & **CCSL006413\_B\_Daily.dat**

Loggernet setup may need editing if logger IP addresses change:

Connection type: select IP Port

IP address: Type [new IP address]:6785 (ie IP address then colon then 6785, with no spaces)

Currently, IP addresses: A – 10.48.160.18 and B – 10.48.160.19

MAC addresses: A – 00:d0:2c:04:12:50 and B - 00:d0:2c:04:12:51

Machine names (used by the Grafana software to identify loggers):

A – hz-logger01-sr1.lancs.ac.uk and B - hz-logger02-sr1.lancs.ac.uk

**Sometimes, network connection is lost without a change in IP address. In that case, try rebooting them – but download data as backup first by direct connection to laptop using the USB to RS232 cable provided. If that doesn’t work, and ISS can confirm there is no change of IP address, give them the above info and ask them to sort it!**