



HPS Hero Data Logger Overview

Our new Hero Data Logger offers significant savings for small- and medium-sized wind projects, where the conventional 15-plus channel data logger would be a costly, overkill solution. Wind farm developers commonly use turbines in the two to three megawatt range and require very tall meteorological (met) towers with many levels of sensors. Up until now, small- or medium-sized projects had to either use these expensive loggers and get more data than they actually needed, or use basic weather station-type loggers that are not specifically designed to interface with the industry-standard sensors and don't provide appropriate data for a comprehensive wind assessment. Finally...a data logger is available that is specifically designed for small- and medium-sized wind projects, and not a multi-megawatt windfarm!

In 2014, the Alaska Energy Authority (AEA) issued a Request for Proposal for an affordable wind data logger tailored to remote, small and medium Alaskan village wind projects. Some of the requirements were that the data logger would allow direct connection of industry-standard wind sensors (without extra interfaces required); would provide specific parameters to develop a thorough wind resource assessment; and would be affordable for small- and medium-sized projects.



Hero Data Logger installation at strawberry farm in Central California.



Met tower installation with Hero Data Logger in Haines, Alaska. Photo courtesy of Rich Stromberg of AEA.

Halus Power Systems was awarded the contract to design and build the logger to the rigorous AEA requirements. The original Hero Data Logger was designed for the demanding environment of remote communities in the state of Alaska, and the current Hero Data Logger continues to improve upon its original robust, reliable, and rugged design.

The Hero Data Logger is a five-channel data logger, designed specifically for wind resource assessment for small- to medium-sized projects, such as distributed generation, micro grid, and community wind projects where 15 or more channels of sensors are not required. The included sensor interface allows direct connection of up to three industry-standard AC signal anemometers, such as the popular #40C anemometer, and one 360 degrees potentiometer wind vane, such as the #200P direction vane. The logger takes readings from the wind sensors and the internal temperature sensor, and logs the data conveniently onto an SD card at one-minute intervals. The logger is enclosed in a weatherproof enclosure, and runs on readily-available D batteries for up to a year.



HPS Hero Data Logger Technical Details & Specifications

Technical Specifications

Data Collection

Sensor Inputs:	(3) anemometer inputs, (1) windvane input, (1) internal temperature sensor (included)
Anemometer Compatibility:	Second Wind/Vaisala C3 anemometer, NRG Systems #40C anemometer
Windvane Compatibility:	Second Wind/Vaisala PV-1 wind vane, NRG Systems #200P direction vane
Anemometer Interface:	Slope and offset scaling, overvoltage protection (protection from ESD and lightning damage), noise filtering
Wind Vane Interface:	Overcurrent protection, noise filtering, and deadband compensation
Sample Rate:	Once every 2 seconds

Data Processing

Logging Intervals:	Once every minute
Internal Clock:	Real time clock with battery backup
Storage Medium:	SD card (4 GB card included)
Data Format:	Comma-separated values (CSV) file generated at each power on/reset of the logger, compatible with both PC and Mac, can be accessed in Excel or similar spreadsheet program

Parameters Recorded:	Average, minimum, maximum, and standard deviation for anemometers; average and standard deviation for windvane; average, minimum, maximum for temperature; battery voltage
----------------------	--

Resolution

Analog Resolution:	16-bit A/D conversion
Logging Resolution:	1 degree rotation (windvane), 0.1 degrees Celsius (temp sensor), 0.1 m/s (anemometers)

Connections

Sensor Connections:	Screw terminals for field wiring of sensors, 12 AWG to 24 AWG wires accepted
Ground Connection:	Screw terminals for field wiring of sensors, 12 AWG to 24 AWG wires accepted

Power Requirements

Battery Type:	(6) 1.5V D cell batteries
Battery Life:	Approximately 9 – 12 months

Installation

Mounting:	Stainless Steel hose clamps onto pipe diameters 3" to 6", stainless steel mounting plates
-----------	---

Environmental

Operating Temperature Range:	-40 deg C to 85 deg C
Rating:	NEMA 1, 3, 4x, 6P, 12

Physical

Dimensions (approx):	12" L X 9" W X 7" H
Weight (approx):	7 lbs (excluding batteries)

Materials

Enclosure:	Fiberglass
Mounting:	Stainless steel

