

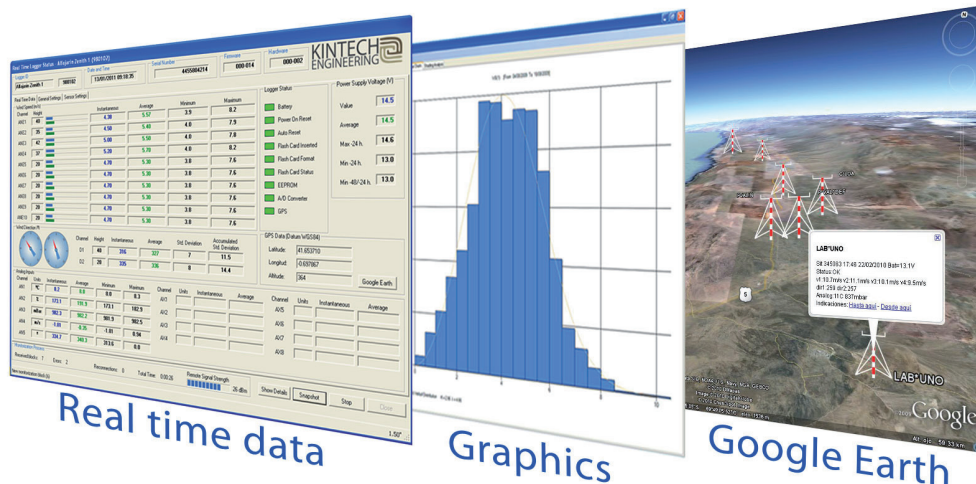
**MAXIMIZE YOUR WIND ENERGY POTENTIAL**

# 3<sup>rd</sup> GENERATION WIND DATA LOGGER EOL ZENITH

Our 3rd generation wind data logger is packed with new features

The EOL ZENITH collects wind data in compliance with IEC61400-12 for high quality wind assessment campaigns, where maximum performance and reliability is a must. The perfect combination of data logger technology together with the most advanced software for modern wind assessment.

- Google Earth
- GPS positioning
- GPRS / Satellite / Modbus
- 1 Hz sampling rate
- Advanced graphics
- Real time data
- Advanced TI calculations
- 10 anemometers
- 7 wind vanes
- EOL Manager
- Data encryption
- 15 analog channels



## MAXIMIZE YOUR WIND ENERGY POTENTIAL

The EOL Zenith is the 3rd generation data logger from Kintech Engineering. The EOL Zenith features 1Hz sampling rate (complying with IEC 61400-12), extended turbulence calculation (TI30), standard deviation, MAX and MIN for all input channels and advanced sensor error diagnosis (e.g. wind vane std. dev.). Real time data together with the Tower Management Tool (TMT) makes it much easier for you to keep track of all your wind assessment sites.

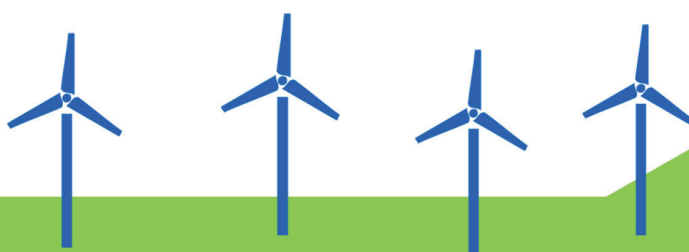
The EOL Zenith includes a GPS module, providing perfect timing, accurate positioning of the met mast for micrositing as well as simplifying site management and supervision. The perfect combination of data logger technology together with the most advanced software for modern wind assessment.

Inputs Wind speed (anemometers):	10
Wind direction (5 analogues and 2 digital):	7
Analog (temperature, pressure etc.):	15
Data sampling rate:	1Hz
Recording intervals (time stamped):	10 min.
GPS positioning (digital signature):	YES
GPS internal clock:	YES
EOL Manager (advanced graphics):	YES
SCADA connection (option):	YES

### Data storage and transfer

Memory capacity (SD/MMC) 5 years of data:	2GB
Web browser access (Internet Explorer):	YES
Remote settings modification:	YES
GPRS telemetry and real time data:	YES
Satellite telemetry and real time data (option):	YES

All input channels are compatible with all class 1 anemometers without the use of interface cards.



# 3<sup>rd</sup> GENERATION WIND DATA LOGGER EOL ZENITH

## The most advanced software for modern wind assessment

The software and remote monitoring system developed for the EOL ZENITH data logger ensure safe and easy access to wind data and logger status, and forms an integral part of the data acquisition system. The software can automatically download all your wind data from an unlimited number of wind assessment towers any day and time forming an integral part of the data acquisition. The software design was created with the user in mind and is both comprehensive and easy to use.

**EOL Zenith Logger Configuration - Alhajarin Zenith 1 (980102)**

Site Info [Reports] Access

--- Anemometers ---

Channel	Type	Model	Units	Serial Number	Height	User Name	Slope	Offset	Std Slope	Std Offset	StdDev	Max	Min
ANE1	Anemometer	THIES FRIST CLASS	m/s	40	Anemo1	0.048040	0.230000	0.048040	0.230000				
ANE2	Anemometer	VECTOR A10XL2	m/s	35	Anemo2	0.051000	0.250000	0.051000	0.250000				
ANE3	Anemometer	NRG 40/40H	m/s	42	Anemo3	0.765000	0.350000	0.765000	0.350000				
ANE4	Anemometer	NRG 40/40H	m/s	37	Anemo4	0.765000	0.350000	0.765000	0.350000				
ANE5	Anemometer	NRG 40/40H	m/s	20	Anemo5	0.765000	0.350000	0.765000	0.350000				
ANE6	Anemometer	NRG 40/40H	m/s	20	Anemo6	0.765000	0.350000	0.765000	0.350000				
ANE7	Anemometer	NRG 40/40H	m/s	20	Anemo7	0.765000	0.350000	0.765000	0.350000				
ANE8	Anemometer	NRG 40/40H	m/s	20	Anemo8	0.765000	0.350000	0.765000	0.350000				
ANE9	Anemometer	NRG 40/40H	m/s	20	Anemo9	0.765000	0.350000	0.765000	0.350000				
ANE10	Anemometer	NRG 40/40H	m/s	20	Anemo10	0.765000	0.350000	0.765000	0.350000				

--- Wind Vanes ---

Channel	Type	Model	Units	Serial Number	Height	User Name	Slope	Offset	Std Slope	Std Offset	StdDev	Min	Max
D1	Windvane	VECTOR W200P	m/s	40	Windvane1	1.000000	0.000000	1.000000	0.000000				
D2	Windvane	NRG 200P / THIES 10K	m/s	20	Windvane2	1.000000	0.000000	1.000000	0.000000				

--- Analog ---

Channel	Type	Model	Units	Serial Number	Height	User Name	Slope	Offset	Std Slope	Std Offset	StdDev	Min	Max
ANL1	Temperature	GALLTEC KPC 1/5	°C	5	Analog1	100.000000	30.000000	100.000000	30.000000				
ANL2	Rel. Humidity	GALLTEC KPC 1/5	%	5	Analog2	100.000000	0.000000	100.000000	0.000000				
ANL3	Pressure	SETRA 276	mBar	5	Analog3	60.000000	794.000000	60.000000	794.000000				
ANL4	Anemometer	PROPELLER 27105	m/s	0	Analog4	3.715000	-9.280000	3.715000	-9.280000				
ANL5	Windvane	NRG 200P / THIES 10K	m/s	0	Analog5	1.000000	0.000000	1.000000	0.000000				

KBites/Day: 16 Minutes/Month (GPRS): 17- 32 Minutes/Month (Satellite): 90 Minutes/Month (CSD): 38 \* Denotes Required

**EOL Manager**

STOP	Kat	Alt	Wind Number	Site Number	Country	Site Name	Last Download Attempt	Last Download Date	Next Download	Attempt Number	Signal Strength	Latitude	Long	Logger Status	Config	Anemometers	Wind Vane	Analog Inputs
			1212084878	054261	Algeria	Kabias	12/05/2011...	12/05/2011...		1	1	-46.89885						
			1094942426	490201	Poland	Kabias	12/05/2011...	12/05/2011...		1	1	50.24906						
			468004028	005104	España	La Canosa 3	12/05/2011...	12/05/2011...		2	1	36.941836						
			912424204	340375	España	La Canalia	12/05/2011...	12/05/2011...		0	0	29.11106						
			1767679023	340372	España	La Calzonera	12/05/2011...	12/05/2011...		0	0							
			1705404476	340371	España	La Sargenta	12/05/2011...	12/05/2011...		0	0	43.20766						
			1724950229	340370	España	La Nigra	28/12/2010...	28/12/2010...		1	25	30.76701						
			1862201918	341354	España	La Tania	12/05/2011...	12/05/2011...		0	0	36.23426						
			107698321	340401	España	La Tania	12/05/2011...	12/05/2011...		1	27	41.82072						
			224844603	340370	España	Lago	12/05/2011...	12/05/2011...		0	0							
			107698303	340402	España	Licenciante	12/05/2011...	12/05/2011...		0	0	37.38006						
			047149238	340372	España	Leites	12/05/2011...	12/05/2011...		0	0							
			407293442	000001	China	Liangshan	12/05/2011...	12/05/2011...		0	0							
			224891236	000003	China	Liang	12/05/2011...	12/05/2011...		1	1							
			001122190	000007	China	Liangang	12/05/2011...	12/05/2011...		2	1	0						
			220894187	000006	China	Lingnan	12/05/2011...	12/05/2011...		1	1	0						
			107714171	340389	España	Llano de Casallo	12/05/2011...	12/05/2011...		1	1	37.48801						
			985487235	340389	España	Llano de la Alca	12/05/2011...	12/05/2011...		1	1	37.48747						
			1013124175	340382	España	Llano de la Escal	28/10/2010...	28/10/2010...		1	25	37.52183						
			463244218	341355	España	Llano de las Cos	12/05/2011...	12/05/2011...		0	0							
			104464501	340378	España	Llano de las Pizarras	12/05/2011...	12/05/2011...		0	0							
			586360263	340387	España	Llano de los	12/05/2011...	12/05/2011...		0	0	37.98221						
			1748224212	990002	Zimbabwe	Llano de Zenith 1	12/05/2011...	13/05/2011 18...	1	25	41.82316							
			1862201918	990003	Zimbabwe	Llano de Zenith 2	12/05/2011...	12/05/2011...	1	24	41.82306							
			1705844241	340442	España	Llano de Calca	05/11/2010...	05/11/2010...		1	18	45.56481						
			191030349	340373	España	Llano de Calca	12/05/2011...	12/05/2011...		0	0							
			1862201918	400001	India	Llano de Calca	12/05/2011...	12/05/2011...		0	0							
			1082912011	340385	España	Llano de Calca	28/10/2010...	28/10/2010...		1	30	42.18725						
			198124269	340301	España	Llano de Calca	28/12/2010...	28/12/2010...		1	29	27.98208						
			041340153	000018	Finlandia	Mauva 40	12/05/2011...	12/05/2011...		1	1	19.78913						

Main overview of data loggers (status on sensors etc.)

Setup of data logger, sensors, automatic data transfer etc.

# MAXIMIZE YOUR WIND ENERGY POTENTIAL

The new developed software for the EOL ZENITH has been visually enhanced with several new features, including advanced graphics for more accurate wind data trouble shooting. The software offers better control of multiple wind assessment sites with automatic and real time connectivity for wind data transmissions.

- Line, rose, bar, scatter and shading charts etc.
- Site setup with calibrations and offsets
- Real time connection (GPRS/GSM/SATELLITE)
- Automatic wind data download

The software introduces several new features including advanced graphics for data analysis (Weibull "best fit", shading analysis charts etc.) and makes it easier to keep track of all your different wind assessment sites.

### Output format

The output format of the wind data files is in text and excel format and includes specific site identification, GPS position and 10 min. timestamps. The data can be imported directly into programs such as WASP, Windsim etc.

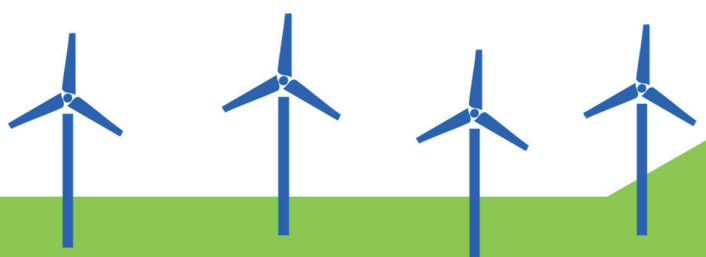
The software for the EOL ZENITH is divided in two sections.

### EOL Manager

The application allows for configuration of the data loggers, sensors connected to the data loggers, modem type, telephone number, how to download the wind data and the frequency of the automatic downloads. For example, view the picture above from the "setup screen" as well as the Main overview screen.

### EOL Charting

The charting tool is the wind data analysis segment of the EOL ZENITH software. It reads the data files from the met towers, and produces clear and easy to understand graphs, wind roses, mast shading, "best fit" Weibull etc. The charting tool allows for advanced quality control of the wind data and makes it easy for you to check the quality of your wind data.



# MAXIMIZE YOUR **WIND ENERGY** POTENTIAL

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