Tinytag Energy Logger

The Tinytag Energy Logger can be used to monitor single and three phase energy supplies. It combines the level of performance required by experts with the level of simplicity required by those that are new to energy management.

The logger is ideal for monitoring building energy supply, sections within a building or individual pieces of equipment.

Data from the Tinytag Energy Logger can be used to identify power hungry or inefficient equipment and peak load times, and can highlight equipment that is left powered up or idling unnecessarily.

The Tinytag Energy Logger provides visibility of energy usage so that effective measures can be taken to reduce electricity bills, lower carbon footprint and improve environmental performance.

Features

- Simple to use
- High accuracy
- Non-invasive
- Small size/lightweight
- Three different coil sizes to chose from

Popular Applications

- Before and after equipment installation monitoring
- Equipment troubleshooting
- Long-term energy usage
- Equipment spot-checks
- Meeting ISO 14001 energy reduction targets

Tinytag Energy Logger

Benefits

- **Portable -** supplied in its own carry case, the unit is small and lightweight making it ideal for use in on-site visits.
- **Easy to use** - select the required wiring configuration and the logger will display step-by–step instructions for the coil and cable connections.
- **Quick and easy coil fitting** - current is measured using non-invasive flexible coils that can easily be clipped around conductors (where larger rigid clamps may not fit) and the voltage reading is taken from a standard mains cable.
- **Self-configuring** - once connected the unit will self-configure and current, voltage, power and power factor readings will be displayed.
- **No complicated set up procedures -** current coils do not have to be connected in the direction of the current flow and coils do not have to be matched to specific sockets. Three different coil sizes are available.
- **Spot checks or long-term monitoring** - the unit can be used for spot checks or for longer term monitoring to build up energy usage profiles.
- **Onsite PC not necessary** - logging is started at the press of a button; no computer is required to start the data logger. Recording can be started and stopped multiple times to allow different pieces of equipment to be monitored in one visit. Separate files are created for each logging run, ready for viewing in Tinytag Explorer.
- **Simple download, display and management of data -** data is viewed and managed using the intuitive Tinytag Explorer software and data can be easily exported to spreadsheet programmes such as Excel. For profiling buildings, data can be combined with temperature and relative humidity data from other loggers in the Tinytag range.
- **Hanging option** - there is a magnet fitted to the back of the logger so it can be attached to metal panels whilst in use.

Tinytag Energy Logger

What Does the Logger Record?

Property	Logger Display	Tinytag Explorer Software
RMS Current (A)		
Instantaneous	Per phase	
Peak over logging interval		Per phase
Average over logging interval		Per phase
RMS Voltage (V)		
Instantaneous	Single	Single
Power (kW)		
Instantaneous	Overall	
Peak over logging interval		Overall & per phase
Average over logging interval		Overall & per phase
Power Factor	Per phase	Per phase
Energy (kWh)		Overall & per phase

- **Display** - the unit's display shows instantaneous rms current (A) from all three phases, the instantaneous rms voltage (V) and an instantaneous overall power figure (kW).
- **Automatic software calculations -** when data is downloaded in the Tinytag Explorer software, the following information is calculated and displayed:
    - peak and average current
    - peak and average power
    - overall peak and average power
    - energy usage information (kWh)
    - a power factor for each phase
- **Automatic waveform detection** - the voltage reference records the waveform of one of the phases and this is used as a reference for the other two.
- **High Accuracy** - the logger samples a 5kHz burst of data every few seconds, building up an accurate profile of the waveform. This makes the unit very good at accurately reading inductive and complex loads where the waveform may not be a true sine wave.
- **Logging** - when logging three phase current and voltage, the unit will record six weeks of data at the default five minute logging interval (this can be changed to anything from 30 seconds to once every 10 days, using the Tinytag Explorer software).
- **Battery power option** - when monitoring with the voltage connected, the unit will power itself from the mains. When logging current without the voltage connected, the unit can record for two months using four user replaceable AA batteries.

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Measurement Specification

Range

Current	2,000A AC RMS (Momentary peak surge current: 2x rated range)
Voltage	200-253V AC nominal
Frequency	Nominal 50/60Hz

Display Resolution

Current	0.1A
Voltage	0.1V
Power	0.1 or 0.01kW (depending on the size of the load being measured).

Accuracy

Current (RMS)*	1% of reading ±0.5A (above 10A)
Voltage (RMS)	0.5% of reading
Power (kW)	2% of reading
Power Factor	<0.02 error (above 1kW)

*Temperature Stability of Current Accuracy 0.1%/°C (from 25°C)

Sampling Frequency	5kHz burst of samples every 2 seconds (every 5 seconds when logging on battery power)

Coils

Absolute Maximum Current	5kA AC RMS

Logging Specification

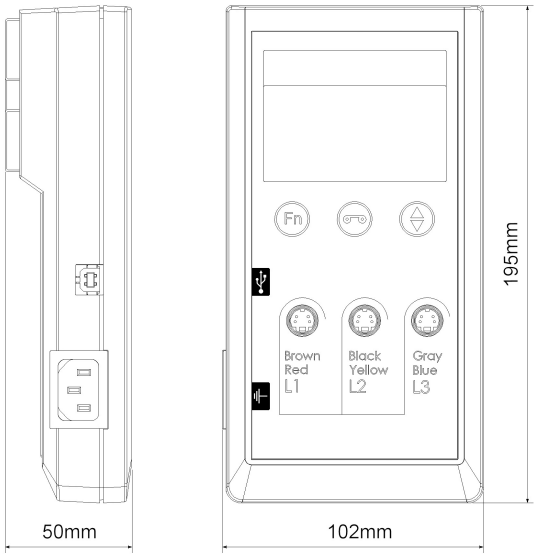
Logging Interval	30 seconds to 10 days
Reading Capacity	Six weeks at the default 5 minute logging interval

Battery Information

Battery Type	4 x 1.5V AA alkaline batteries (supplied)
Battery Life	60 days, typical, based on a battery capacity of 2500mAH*

*When a mains lead is plugged in, the logger will be mains-powered. If the mains should fail, the batteries in the logger will typically keep it recording for 60 days.

Physical Specification



This logger is suitable for indoor use only.

Operational Temperature Range	0 to +50°C
Maximum Humidity	95% (non-condensing)
Case Dimensions	
Length	195mm
Width	102mm
Depth	50mm
Weight (Including batteries)	600g
PC Connection	USB

Approvals

Gemini Data Loggers (UK) Ltd. operates a Business Management System which conforms to ISO 9001 and ISO 14001.

EMC: EN 61326-1 Electrical equipment for measurement, control and laboratory use – EMC requirements.

Safety: EN 61010-1:2010, IEC 61010-1 (Third Edition):2010 and IEC 61010-2-030: 2010 (First Edition) Safety requirements for electrical equipment for measurement, control and laboratory use.

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Tinytag Energy Logger

In The Box

Tinytag Energy loggers are supplied in a carry case that contains the following items:

1 x Tinytag Energy Logger
1 x UK mains lead
1 x Tinytag Explorer software CD
1 x User Manual
3 x Current coils
1 x EU mains lead
1 x USB cable

There are three different coils sizes to chose from, as below:

TGE-0001 (Standard Coils)

Coil Specification	
Part Number	ACS-0020
Coil Thickness	8mm
Inner Loop Diameter	85mm (typical)
Cable Length	1m
Weight	72g

TGE-0002 (Large Coils)

Coil Specification	
Part Number	ACS-0021
Coil Thickness	8mm
Inner Loop Diameter (typical)	175mm (typical)
Cable Length	1m
Weight	125g

TGE-0003 (Small Tear-drop Coils)

Coil Specification	
Part Number	ACS-0022
Coil Thickness	8mm
Inner Loop Diameter	38mm (typical)*
Cable Length	1m
Weight	100g

*The loop diameter can be minimised by fitting a cable tie around the lower part of the coil, once it has been clipped around a conductor (as shown).