Product Brief (PRELIMINARY)

with Neutral/Earth Leakage Measurement

Energy Metering and Safety

- Energy Metering
- Earth Leakage Measurement
- LoRaWAN (Class C)
- (optional) "Last Gasp" report during power outages
- (optional) Add-on environment & filter monitoring
- (optional) Redundant Comms. (LTE Cat. M1/NB1)



Product Description

Definium's Luna Energy is a drop-in solution for metering energy usage and monitoring for potentially hazardous earth current leakage situations. Multiple back-haul network technologies and additional monitoring/metering options are available, making the Luna Energy one of the most flexible energy metering devices on the market.

The Luna Energy is based on Definium's Internet of Things sensor platform, utilising a robust long-range low-power LoRa radio with LoRaWAN support to report metrics with no additional wiring required. Optional additional sensors are available via CANbus add-ons, including air filter monitoring, environmental monitoring, enclosure tamper detection, and more. An optional backup battery enables a "last gasp" transmission when a power outage is detected. The Luna Energy constantly measures power usage, reporting earth current leakage and other potentially dangerous situations within seconds.

Energy metering comes with sub-metering capability and power quality metrics, both of which can help optimise power bills by identifying high-cost energy use.

The Luna Energy is powered directly via the monitored source and only requires active and neutral connections, plus an antenna.

Each unit comes pre-configured with unique internal ids and encryption keys, reducing overall commissioning time. Settings can be altered remotely at any time.

Definium Technologies designs and manufactures its devices inhouse in Launceston, Tasmania. Definium produces a broad range of gateways and sensors to use in any IoT network.

Product Selector

Model	Ne	twor	king	Fea	ature	s			Pha	ases	Int	erfac	es	Re	porti	ng	Ene	losu	re
	Ethernet (TCP/IP)	LTE Cat. M1 / LTE Cat. NB1	LoRa® / LoRaWAN™	Energy Metering	Neutral/Earth Leakage Monitoring	Temperature & Humidity	Air Filter Monitoring	"Last Gasp" Battery	Single-Phase	Three-Phase	LoRaWAN TM Remote Configuration	Remote LTE Configuration	Local USB Interface	Periodic Reporting & Alarms	Power Outage Alarm	Environmental Alarms	Polycarbonate DIN-Rail (Slim)	Polycarbonate DIN-Rail (Full)	IP-rated Exterior Mount
Luna Energy		0	0	•	•	0	0	0	•		•	0	•	•	0	0	•	0	
Luna Energy Outback		0	0	•	•	0	0	0	•		•	0	•	•	0	0			•

Ensure you order the correct product for your LoRaWAN™ region. ● = Included. ○ = Differs with product variants.



Luna Energy

Features

Single-phase Metering	Accuracy TBA Active, reactive, & apparent energy Sampled waveform Current and voltage RMS Neutral current measurement Instantaneous power
Fault Detection	Neutral/Earth current leakage measurement
Reporting	Reporting/alarms via LoRaWAN Visual indicator of current status Secondary reporting via redundant communications Optional environmental state alarm
Environment Temperature Humidity Air Filter Impact Detection	Optional Environmental Monitoring -40°C to +85°C (±1°C) ±3% relative humidity Air Pressure Across Filter Range ±2 kPa (±0.29 psi) Typ. Accuracy ±2.5% (10°C to +60°C) Impact
LoRaWAN™	Class C LoRaWAN™1.0.2 Support Supports multiple regions (device variants) Supports adaptive data rate
Redundant Communications LTE	(optional) LTE Cat. M1 and Cat. NB1 External or internal antenna
Markings	DataMatrix with Device Info EUI64 Safety and compliance markings Electrical connection markings
Electrical Data	
Power	85 –305 VAC 47 –63 Hz Surge protected Noise filtering
Consumption	TBA (est < 1W) (varies with options)
Enclosure	
Polycarbonate DIN (Slim)	ТРА

Polycarbonate DIN (Slim)	TBA
Polycarbonate DIN (Full)	TBA
IP-rated External Mount	ТВА

Environmental data, quality & reliability

Operating range	-10°C to 70°C	
RoHS compliant (le	ad-free)	

Security

Secure internal storage of keys

Noise-based random number generator

Certifications and approvals

AS/NZS 60950.1:2011, AS/NZS 4268:2012 Other certifications TBA

Support products

DT1046	Nexus 8 LoRaWAN $^{\rm \tiny M}$ Gateway with CAN, LTE, PoE
LoRaWAN™ netwo	k provision and hosting via partners

Product variants

TBA

Preliminary Product Notes

Enclosure	External enclosure will be sealed against the weather (IP rating TBA).
Connections	The unit will utilise semi-enclosed spring-loaded or screw-terminal connections on internal units, as appropriate.
Compliance	Device will be compliant with AS 3000 and other relevant standards.
Temperature	Temperature range may be able to be extended if required.
Add-on units	CAN-based add-on units are speculative and based on existing Definium devices. Volume orders can specify which units are built and in which configuration.
Changes	The Luna Energy this is a preliminary product with hardware in sampling. Changes to functional requirements can be requested and will be accommodated where possible.

Further Information

For conact information, see www.definium.net/contact.

For more product details and ordering information, see the product data sheet. IoRa^a and LoRaWAN^a are registered marks used under license from Semtech Corporation and the LoRa Alliance^a.

Legal Notice:

Definium Technologies reserves all rights to this documentation and the information contained herein. Products, names, logos, and designs described herein may in whole or in part be subject to intellectual property rights. Reproduction, use, modification, or disclosure to third parties of this document or any part thereof without the express permission of Definium Technologies is strictly prohibited.

The information contained herein is provided "as is". No warranty of any kind, either express or implied, is made in relation to the accuracy, reliability, fitness of a particular purpose or content of this document. This document may be revised by Definium Technologies at any time. For most recent documents, please visit https://www.definium.net.

Copyright © 2019, Definium Technologies Pty Ltd.