Product Brief

Luna Level

Ultrasonic Level Sensor with LoRaWAN® long-range low-power radio

Industrial, Scientific Temperature Monitoring

- LoRaWAN low-power long-range connectivity
- Up to 10 metres ±1 cm precision, 5 metres with ±1mm precision
- Up to 15 years battery life with multiple reports per day
- Fully reconfigurable via USB or LoRaWAN downlink
- Level alarm mode with periodic sampling
- Multi-constellation GNSS (GPS, GLONASS, BeiDou, Galileo)

Product Description

Definium's low-maintenance ultrasonic level sensor with LoRaWAN is a drop-in solution for monitoring all types of fluid levels. Automatic threshold-based alarms for low or high level conditions are reported in seconds, reducing response time.

Based on Definium's Internet of Things sensor platform and backed by long-range low-power LoRa® radio, each sensor has a designed battery life of up to 15 years with daily reporting.

The ultrasonic sensor is designed to be mounted above the target fluid to be monitored and automatically filters out echoes from minor obstructions (different filtering available on request). A ruggedised version with IP67-rated connectors and corrosion-resistant sensors is available.

Integrating incoming data into existing systems is as easy as connecting to a LoRaWAN server and receiving data within seconds of it being sent.

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

Product Selector

Model	Region			Sensors		Radios		Interfaces			Features			Enclosure	
	AU915, AS923 (Australia / Asia)	US915 (United States)	EU868 (Europe)	Range	Precision	LoRa, LoRaWAN, FSK	Multi-constellation GNSS	USB Serial Console	LoRaWAN Downlink Config	Bluetooth	Periodic Reporting	Threshold-based Alarm	Thermal condensation cleaning	IP65 Polycarbonate	IP67 Polycarbonate
DT1176	○	○	○	10 m	1 cm	●	●	●	●		●	●		●	
DT1176-P	○	○	○	5 m	1 mm	●	●	●	●		●	●		●	○
DT1176-OUTBACK	○	○	○	5 m	1 mm	●	●	●	●		●	●	●		●

Ensure you order the correct product for your LoRaWAN region (see below). ● = Included. ○ = Differs with product variants.

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Features

Ultrasonic	1 cm precision with 10 metres range
	1 mm precision with 5 metres range
	Thermal sensor cleaning (Outback)
	Threshold-based alarm notifications
LoRaWAN	Class A LoRaWAN™1.0.2 Support
	Supports multiple regions (firmware variants)
	Supports adaptive data rate
	Device settings configurable via downlink
	Pre-configured EUI and keys with QR-code
	Reconfigurable LoRaWAN™keys via USB serial
GNSS	Concurrent multi-constellation GNSS (3)
	GPS, Gallileo, GLONASS, and BeiDou support
	GNSS time synchronisation

Electrical Data

Power	3.6 V Lithium battery (38 Ah)
Input limit	0 V minimum, 3.6 V maximum
Consumption	Up to 120 mA (transmitting)
	Below 5 uA (sleeping)
	Up to 15 years battery life
	(varies with report frequency)

Enclosure

IP65 Polycarbonate	95 × 75 × 35 mm, 300 g
IP67 Polycarbonate	82 × 85 × 56 mm, 300 g

Environmental data, quality & reliability

Operating range	−20°C to 60°C

RoHS compliant (lead-free)

Security

Secure internal storage of keys

Radio noise-based random number generator

Certifications and approvals

AS/NZS 60950.1:2011, AS/NZS 4268:2012, IEC 60950−1, CENELEC EN 60950−1, 47 CFR 15.247, 47 CFR 15.207, 47 CFR 15.247, 47 CFR 15.215, IDA TS SRD

Non-Australian certifications in-progress

Support products

DT1046	Definium Nexus 8 LoRaWAN Gateway with CAN, LTE, PoE

LoRaWAN network provision and hosting via partners

Further Information

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

For more product details and ordering information, see the product data sheet.

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