Product Brief Luna Condition Monitor

with Vibration, Environmental Sensors, Digital In/Pulse, and/or Current Sense

Monitor and Control

- LoRaWAN[™] low-power long-range radio connectivity
- Monitor machinery vibrations for indications of failure and on-time
- Get remote alerts when machine alarms activate
- Monitor environmental conditions and machinery temperatures
- Detect current usage of the attached machine
- Always-on 12 VDC powered

Product Description

Definium's Luna Condition Monitor with LoRaWAN is a drop-in solution for monitoring existing assets for predictive maintenance, usage, filter cleanliness, alarm signals, or temperature issues.

Based on Definium's Internet of Things sensor platform and backed by long-range low-power LoRa[®] radio, each sensor is designed to be always-on and continuously monitor machinery.

Vibration information is constantly captured, analysed, and transmitted (in abbreviated form) via LoRaWAN radio. Integrate vibration data into predictive maintenance models to identify issues and repair assets before they fail.

Monitor on time of motors through vibration, digital input/pulse, or current sensing options to understand how assets are used in the field. Environmental monitoring monitors air pressure to



identify pressure drops as filters become congested. Dual temperature probe options monitor motor temperatures or coolant lines to identify abnormal temperature swings.

CAN bus integration allows the unit to connect to additional CAN devices such as other Condition Monitors, ultrasonic sensors, additional temperature probes, and more. CANbus support allows for multiple Condition Monitors or other CAN-based sensors to be deployed deep inside a machine with an external primary Condition Monitor relaying data back via LoRaWAN.

Each sensor comes pre-configured with unique LoRaWAN ids and encryption keys which can be altered via a serial interface.

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	Features		Environmental			Radios		Config			Reporting			Enclosure					
	12 kHz Vibration	Digital Inputs	Current Monitoring	Always-On Monitoring	Temperature Probes	Air Pressure	Humidity	Volatile Organic Gases	LoRa®, LoRaWAN, FSK	CANbus	Serial Console	LoRaWAN Downlinks	CANbus	Periodic Reporting	Condition-based Alarm	External CAN Sensors	Polycarbonate Small	Polycarbonate IP67	Custom Enclosure
DT1173-P	•			٠		٠				٠	•		٠				•		
DT1173-PT	•			٠	1	٠			•	٠	•	٠	•	•		8	•		
DT1173-DT	•	1		٠	1				•	٠	•	٠	•	•	٠	8	•		
DT1173-TT	•			٠	2				•	٠	•	٠	٠	•		8	•		
DT1173-PTT	•			•	2	•			•	•	•	•	•	•		8	•		
DT1173-KS	•	1	•	•	2	•	•	•	•	•	•	•	•	•	•	32		•	

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



Luna Condition Monitor

Features

Vibration	12 kHz vibration monitoring 3-axis Fast-fourier transform Peak samples – 4-6 per axis
Environment	Air pressure (optional) Humidity (optional) Gas concentration (VOC, optional) Dual temperature probes (optional)
Energy	Current monitoring (optional) Accuracy varies with CT
Digital	Digital input (optional) 1 kHz pulse counting Alarm on transition
CANbus	Connects to CAN network Acts as LoRa radio for CAN sensors
Reporting	Periodic reporting Digital/environmental alarm
LoRaWAN	Class C LoRaWAN 1.0.2 Support Region-specific product variants Supports adaptive data rate Device settings configurable via downlink Unique QR-code affixed to front Pre-configured EUI and keys Reconfigurable LoRaWAN keys via USB serial

Electrical Data

Power	5 – 12 VDC
Input limit	3.5 V minimum, 12.2 V maximum
Consumption	Average 100 mW @ 5 VDC Maximum 1 W (transmitting)

Enclosure

Polycarbonate	70 imes35 imes22 mm, 300 g
	(plus antenna, cables)

Environmental data, quality & reliability

Operating range	-20°C to 60°C
RoHS compliant (I	ead-free)

Security

Secure internal storage of keys

Radio noise-based random number generator

Certifications and approvals

AS/NZS CISPR 32: 2015, AS/NZS 4268:2017

Other certifications planned:

AS/NZS 60950.1:2011, 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

Support products

DT-1046	Nexus 8 LoRaWAN Gateway (8 channel) CAN, LTE Cat 1, PoE, HDMI
DT-1090	Nexus 32 LoRaWAN Gateway (32 channel) CAN, LTE Cat 4, PoE, HDMI, RS232, Dual Ethernet
LoRaWAN net	work provision and hosting via partners

Regional variations

MODEL-AU	Australia (LoRaWAN AU915)
MODEL-AS	Asia, New Zealand (LoRaWAN AS923)
MODEL-US	North America (LoRaWAN US915)
MODEL-EU	Europe (LoRaWAN EU868)
MODEL-PH	Phillipines (LoRaWAN EU868)

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^{*} are registered marks used under license from Semtech Corporation and the LoRa Alliance^{*}.

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