

Smart retrofitting projects with LoRaWAN

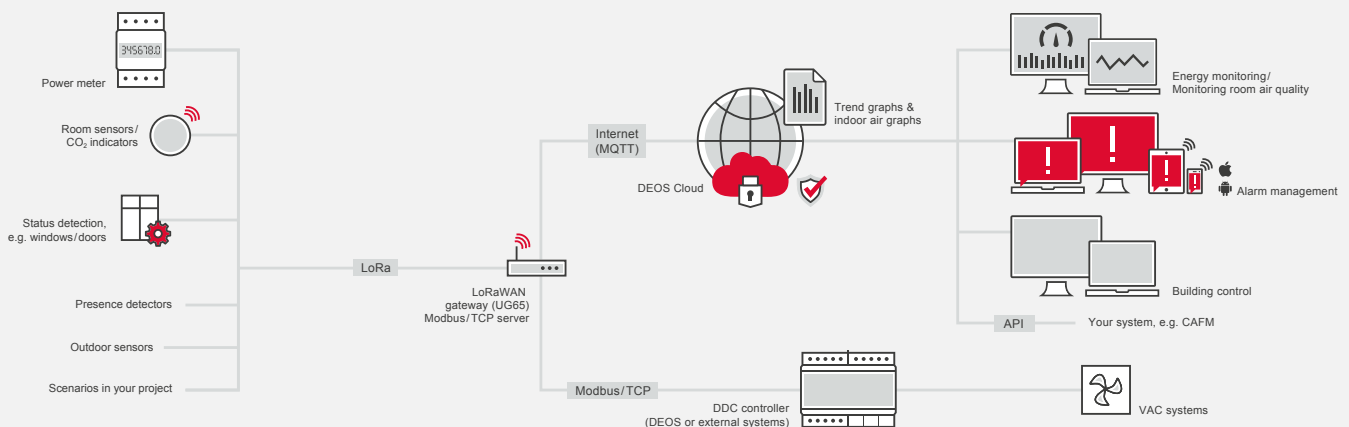
Economical wireless solutions for sensor systems

For retrofitting projects and even for new building projects, integration solutions based on the Long Range Wide Area Network (LoRaWAN) wireless standard continue to gain ground. This type of wireless connection offers several advantages when compared to other wireless technologies for the connection of sensors, meters, control units, etc., such as a high degree of building penetration, economic efficiency, and quick integration at the construction site.

Combining modern IoT/Cloud-based solutions from DEOS and classic measurement and control technologies with

the flexibility provided by LoRaWAN results in brand-new possibilities of use. The objectives are to reduce the load on the technical facility management, lower costs and inspire building owners with new features.

LoRaWAN devices in a building are used for the wireless and bidirectional exchange of data via an on-site TBE control system. Building data is available locally via Modbus-IP and stored in the DEOS Cloud through the Internet. The digital building information is then available for the monitoring of energy and indoor air quality as well as building control.



LoRaWAN advantages for a building

- ✓ **Wireless networking rather than wired connections**
Wireless . battery-operated sensors . simple retrofitting . low expense . can be used anywhere
- ✓ **Portability rather than a permanent installation**
Temporarily installed wireless sensors for system optimisation or analysis projects

- ✓ **Highest level of IT security, not prone to failure**
Extremely robust network . Immune against interference . secure data transmission: two security levels, AES encryption and end-to-end encryption . Prevention of electronic eavesdropping
- ✓ **Economical thanks to a long range network**
No repeater infrastructure . excellent building penetration and coverage

Three clever building enhancements

Practical LoRaWAN applications from the field

LoRaWAN sensors for monitoring indoor climate

SAM, the CO₂ indoor air quality indicator from DEOS SAM, is an indoor sensor that measures the CO₂ content, the temperature and the humidity in a room. Data is transferred to the DEOS Cloud via the LoRaWAN Gateway. This is where web-based analysis and graphic visualisation take place. The integrated report option enables verification of indoor air quality at any time.



Door status and automatic closing

LoRaWAN door and window open/closed sensors are used to transmit the open/closed condition so there's no need for labour-intensive inspection rounds. Magnetic closure is triggered via the LoRaWAN IO module and all doors will be shut at the push of a button. Climate control is being optimised simultaneously.

Modbus connection to building automation

Our data collector – the LoRaWAN gateway with integrated Modbus interface – exchanges building data with the DEOS IoT platform through the Internet. Data can be made available for further use to the local measurement and control system via Modbus.



Overview: LoRaWAN devices of mentioned projects

Part number	Part name
DS-360448	LoRa gateway incl. Modbus interface; optional power supply unit or PoE operation with DEOS configuration wizard
DS-360447	DEOS SAM – LoRa indoor air sensor with indicator and measurement of CO ₂ concentration, temperature and humidity
DS-360461	LoRa magnetic window contact with measurement of temperature and humidity, IP66
DS-360462	LoRa input/output module 2DI/2DOR
DS-360463	LoRa temperature and humidity sensor with a 2-inch display incl. light and motion sensor (PIR)
DS-360464	LoRa sensor for CO ₂ concentration, temperature, humidity and barometric pressure, IP66
DS-360450	LoRa humidity and temperature sensor, indoor/outdoor

These LoRaWAN components can also be provided for retrofitting projects or new building constructions. Please feel free to contact us directly by e-mail (it@deos-ag.com) or by phone and together we will realise your individual solution.