



AarteWAN – Wireless Cooling Unit Monitoring

The AarteWAN LoRa temperature sensors and the web-based reporting provide a reliable and easy solution for monitoring the temperature of cooling units and integrating these into your processes.

AarteWAN – industry standard compliant implementation of LoRaWAN™ elements

Temperature monitoring

Official regulations require the monitoring and documentation of the temperature of refrigerating appliances. This ties up resources and is often error prone.

The temperature monitoring system offered by Artesys, on the other hand, provides an easy-to-install, simple and operationally reliable solution. Thanks to the use of the wireless LoRaWAN™ technology, the solution is highly scalable and can easily be adapted to your requirements.

Clear visualization on a PC or mobile device and automatic document transfer make the solution complete.

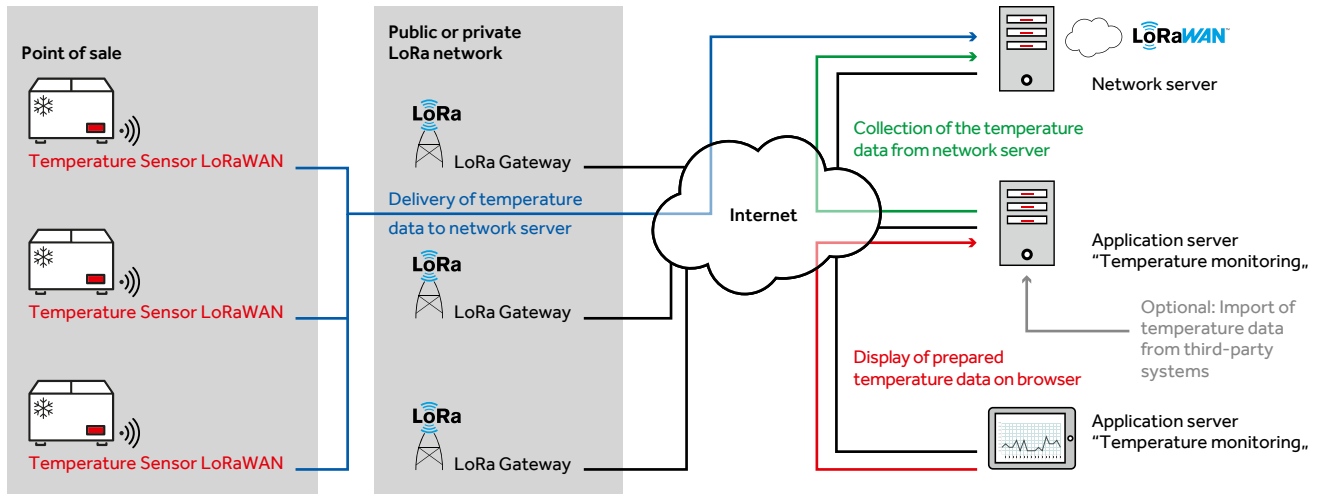
Flexible wireless network

The wireless networks operated with LoRaWAN™ use license-free radio frequency bands and can be built up as private networks for personal use. However, LoRaWAN™ wireless networks are also operated by service providers such as e.g. Swisscom so that no separate network infrastructure needs to be created in order to use the solution.

The result is an unparalleled flexibility in scaling of the application for monitoring either a few sensors or even providing full-scale monitoring for retail chain customers operating a large number of outlets.

Benefits

- + LoRaWAN™ compatible
- + Operation on public or private LoRaWAN™ networks
- + Highly scalable
- + Battery life > 10 years
- + Very large radio range
- + Extremely easy commissioning
- + Remote configuration of the temperature probes
- + Permits import of temperature data from third-party systems into one integrated representation



Functions

The autonomous sensors periodically measure the temperature in the cooling units and supply the data in the encrypted form via the LoRa network to the LoRa gateway, which forwards the encrypted data via IP connection to the network server.

The network server receives the data and provides it at an interface in an exclusive and secured manner. The application server connects with the network server, collects the user data and saves it in a database, and presents it to the users in prepared form via the web server.

The measured data can be sent periodically, e.g. monthly as electronic report (PDF, CSV).

Technical specifications

Wireless technology	Wireless network	Private or public LoRa network
	Network protocol	LoRaWAN™
	Frequency range	863 – 870 MHz
	Sensitivity	-140 dBm
	Encryption	AES128 network/application
Temperature sensors	Name	AarteWAN LoRa temperature sensor
	Measuring range	-20°C to +40°C
	Accuracy/dissolution	+/- 1° C with 0.2° C resolution
	Power supply	Lithium battery, 3.6 V/3600 mAh
	Battery life	12 years for hourly measurement and daily data delivery
	Design	Glass-fibre reinforced ABS enclosure, IP67
Application	Server	As a service or own application
	Clients	Browser on PC or mobile Android devices
	Data view	1-n separate locations, each with view of 1-n temperature sensor(s)
	Display formats	Temperature graphs and table presentation
	Format for report submission	PDF or CSV files