

DYNAMIC · SMART · WIRELESS



SAM-LAN – The Wireless Network
for Local and District Heating Systems

SMART IN FLOW CONTROL

COMMUNICATION AND TECHNOLOGY



Cloud-based access and visualization

The SAM DISTRICT ENERGY web application provides maximum transparency for the connected (heating) controllers, utility meters and electric actuators. With the cloud-based software-as-a-service model, users benefit from visualization and access to devices connected to the SAM-LAN wireless network. Features, such as maps showing the location of gateways, predictive fault management and integrated (API) interfaces for connection to customers' ERP systems, increase the efficiency and service performance.

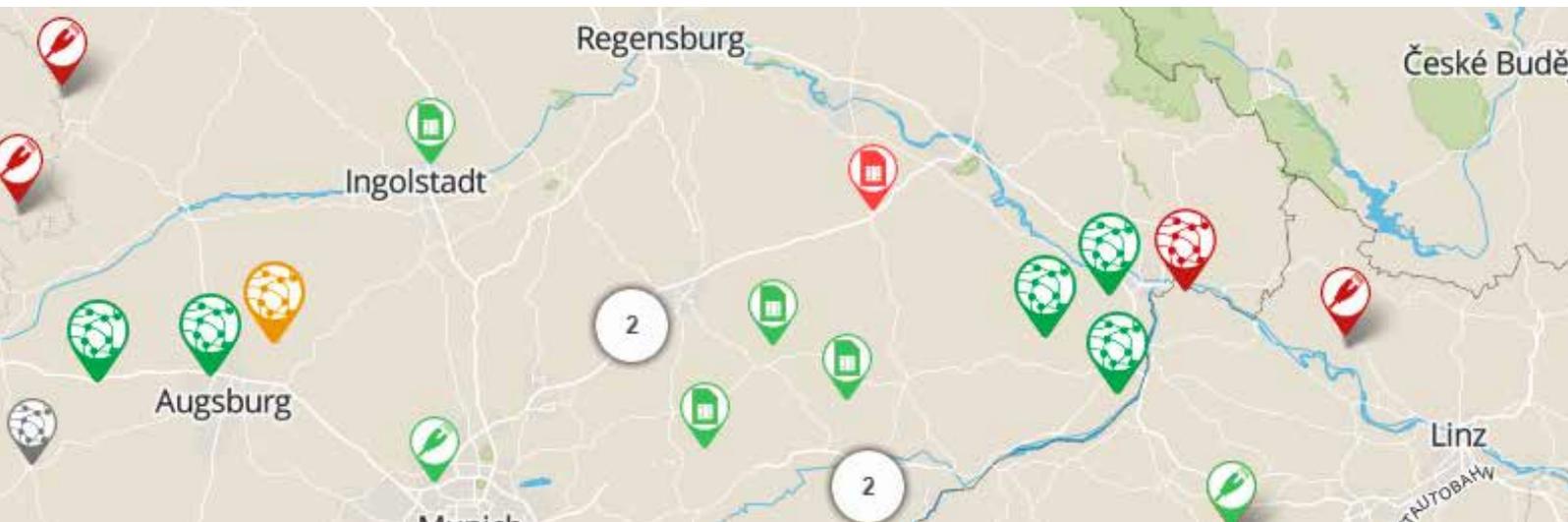
Communication

- Interface for LoRaWAN™ technology to transfer data to a LoRaWAN™ network
- Convenient control and remote maintenance access
- Versatile stand-alone solution for remote monitoring in urban and rural areas
- Reliable, stable communication through brick walls and from basements
- ZBD functions for reading manufacturer-specific utility meters (including billing day or monthly data)
- Integrated web server including live views and distribution of configurations across the aggregation nodes

Technical data

- Internet of Things (IoT) using IPv6
- Data transmission with up to 100 kbit/s
- AES-256 encryption
- Wireless technology using 869 MHz ISM band
- 80 nodes per aggregation node
- Multiple antenna system
- Firmware updates over the aggregation node

SAM-LAN MEETS IOT

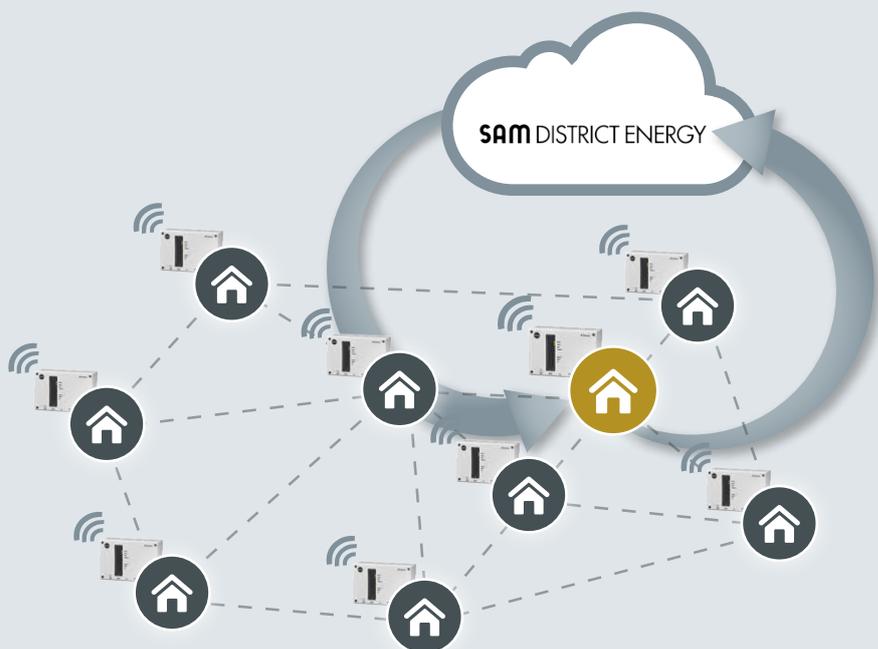


Benefits at a glance

- Easily upgradable system
- Logging of heating and meter data
- Wide range covered in urban and rural areas
- Self-configuring, self-healing wireless network
- Excellent energy efficiency
- No additional cost resulting from third-party suppliers

SAM-LAN is an intelligent, dynamic wireless network to connect house substations in local and district heating systems. The stand-alone network is particularly dynamic and flexible with its own topology. Unlicensed radio frequency bands are used to enable

communication between substations. The wireless network and data exchange over SAM-LAN help save energy and optimize existing systems.



FUNCTIONS AND SECURITY



Benefits of use

- Many possibilities to cut cost
- Optimized operation
- Optimized costing
- Fault management
- Simultaneous connection of Modbus devices and utility meters

Data logging

The following consumption data and states can be logged:

- Operating states of devices
- Device-specific data, parameters and current values from (heating) controllers
- General consumption data from utility meters
- Convenient control and remote maintenance access of TROVIS heating controllers (except TROVIS 5578-E)
- Parameter settings of heating characteristic and heating schedule

Integrated intelligence

The self-organization of SAM-LAN prevents data loss. If a connection between two nodes temporarily fails, the network automatically searches for the next possible path to transfer data packages.

Data integrity check

A high level of data security is provided by SAM-LAN's network topology with its security features. AES-256 encryption prevents unauthorized access, data manipulation and data theft.

SAM[®]
DIGITAL

Refer to our brochure WA 380 for more details on our standard data security specifications for the SAM DISTRICT ENERGY web interface.

TECHNICAL DATA



Planning

The SAM-LAN Network Planner software assists users in planning and customizing their wireless networks. Geographic data are used as the basis for mapping and facilitate network planning. After determining the house substations and nodes, the attenuation values are selected based on the type of building. Through simulation, the appropriate network structure is found

and the ideal position of the aggregation node (wireless network access point) calculated.

Status

The wide range of data collected by the aggregation node guarantees the network's proper functioning.

Customization

The site-based metadata serve to customize the controller and aggregation nodes for a well-structured and secure data management. Customer-specific data include:

- Name
- Address
- Phone number
- Station number

The SAM-LAN Network Planner software is available for downloading from our website (see QR code on the back of this brochure).

SAMSON AT A GLANCE



STAFF

- Worldwide 4,500
- Europe 3,700
- Asia 600
- Americas 200
- Frankfurt am Main, Germany 2,000

MARKETS AND APPLICATIONS

- Chemicals and petrochemicals
- Food and beverages
- Pharmaceuticals and biotechnology
- Oil and gas
- Liquefied Natural Gas (LNG)
- Marine equipment
- Power and energy
- Industrial gases
- Cryogenic applications
- District energy and building automation
- Metallurgy and mining
- Pulp and paper
- Water technology
- Other industries

PRODUCTS

- Valves
- Self-operated regulators
- Actuators
- Positioners and valve accessories
- Signal converters
- Controllers and automation systems
- Sensors and thermostats
- Digital solutions

SALES SITES

- More than 50 subsidiaries
in over 40 countries
- More than 200 representatives

PRODUCTION SITES

- SAMSON Germany, Frankfurt, established in 1916
Total plot and production area: 150,000 m²
- SAMSON France, Lyon, established in 1962
Total plot and production area: 23,400 m²
- SAMSON Turkey, Istanbul established in 1984
Total plot and production area: 11,100 m²
- SAMSON USA, Baytown, TX, established in 1992
Total plot and production area: 20,000 m²
- SAMSON China, Beijing, established in 1998
Total plot and production area: 47,000 m²
- SAMSON India, Pune district, established in 1999
Total plot and production area: 28,000 m²
- SAMSON Russia, Rostov-on-Don, established in 2015
Total plot and production area: 24,000 m²
- SAMSON AIR TORQUE, Bergamo, Italy
Total plot and production area: 27,000 m²
- SAMSON CERA SYSTEM, Hermsdorf, Germany
Total plot and production area: 14,700 m²
- SAMSON KT-ELEKTRONIK, Berlin, Germany
Total plot and production area: 1,100 m²
- SAMSON LEUSCH, Neuss, Germany
Total plot and production area: 18,400 m²
- SAMSON PFEIFFER, Kempen, Germany
Total plot and production area: 20,300 m²
- SAMSON RINGO, Zaragoza, Spain
Total plot and production area: 19,000 m²
- SAMSON SED, Bad Rappenau, Germany
Total plot and production area: 10,400 m²
- SAMSON STARLINE, Bergamo, Italy
Total plot and production area: 27,000 m²
- SAMSON VDH PRODUCTS, the Netherlands
Total plot and production area: 12,000 m²
- SAMSON VETEC, Speyer, Germany
Total plot and production area: 27,100 m²

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