The Digital Solution for Local Heat Supply and District Heating Networks
SAM DISTRICT ENERGY is a web-based solution for managing, controlling, and optimizing heating and cooling systems. All key data on connected controllers, utility meters, and electric actuators are saved at one central location. A gateway is used to log the energy consumption data and make them available on the SAM DISTRICT ENERGY platform. Meter IDs and consumption data are clearly assigned to one another so that the heat consumption and billing information are logged correctly for every customer. Making trips to read meters on site becomes a thing of the past. The large amount of logged data allows you to analyze your local and district heating networks, increase their efficiency and achieve better system transparency.
APPLICATIONS AND MARKETS

Energy suppliers and network operators
- Detailed analysis of the district heating networks
- Information on water flow times and routes
- Reduced operating temperature, resulting in lower fuel cost and CO₂ emissions
- Data pool for analysis and operational plans

Property management companies and service providers
- Support in configuring, optimizing and monitoring systems
- Assistance in planning service jobs
- Strengthened customer loyalty through improved service
- Early alarm notification in the event of malfunctions
ADDED VALUE

Visual network analysis
- Heat map in time-lapse mode
- Dynamic detection of a network’s point of worst efficiency
- Route management
- Theoretical and actual hydronic balancing of the district heating network
- Connection of pressure sensors for upstream and downstream pressures, safety circuits and pumps

Sensor sharing
- Fewer sensors [e.g. outdoor sensors] required, shorter mounting times and less corehole drilling
- Data exchange between controllers within a branch
- Forwarding of demand
- Remote switching of pumps [e.g. feed pumps]

Data export to third-party ERP systems
- SAP
- Oracle®
- FTP etc.

Network pump control
- Reduced pump output
- Control based on differential pressure and/or control signals issued by heating controllers
- Centralized overview
- Easy installation thanks to cross communication

Maximum transparency
- Historical data for documentation, certification and analysis
- Heat consumption of individual meters or entire branches recorded by virtual devices
- Event and alarm tracking
- Overview of states and network behavior
- Opportunity to create new business models

ADDED VALUE

Visual network analysis
- Heat map in time-lapse mode
- Dynamic detection of a network’s point of worst efficiency
- Route management
- Theoretical and actual hydronic balancing of the district heating network
- Connection of pressure sensors for upstream and downstream pressures, safety circuits and pumps

Sensor sharing
- Fewer sensors [e.g. outdoor sensors] required, shorter mounting times and less corehole drilling
- Data exchange between controllers within a branch
- Forwarding of demand
- Remote switching of pumps [e.g. feed pumps]

Data export to third-party ERP systems
- SAP
- Oracle®
- FTP etc.

Network pump control
- Reduced pump output
- Control based on differential pressure and/or control signals issued by heating controllers
- Centralized overview
- Easy installation thanks to cross communication

Maximum transparency
- Historical data for documentation, certification and analysis
- Heat consumption of individual meters or entire branches recorded by virtual devices
- Event and alarm tracking
- Overview of states and network behavior
- Opportunity to create new business models
**Unlimited scalability**
- Unlimited number of users
- Unlimited number of stations
- Integration of existing plants
- Integration of stations away from the existing infrastructure

**24/7 customer support**
- Only one point of contact for both connectivity and district heating
- Alarm management
- Remote access saves unnecessary trips to the field

**Secondary use**
- Individual access authorization for key account users
- Consumption readings in real time
- Export function
- Detailed user administration
- Active assistance for customer support staff

**The bigger picture**
- Lower temperature in the district heating network by reducing the safety margin
- Fewer network losses
- Optimized service
- Easy isolation and opening of entire pipeline sections
- Improved utilization of network pumps thanks to flexible analysis of pressure sensors
- Energy limitation
- Browser-based app with responsive web design (suitable for all devices, e.g. notebooks, computers and smartphones)
- Link existing systems over web services (API)
- Flexible connection to the web portal
- Combination of various connections within a system
- Connection of all relevant devices in a station, such as controllers, actuators, heat meters, differential pressure meters, pumps, safety circuits, door contacts etc.
- Versatile use of heat meters, e.g. for temperature monitoring
THIRD-PARTY SYSTEMS

SAM DISTRICT ENERGY makes it easier to integrate third-party systems, e.g. customer servers. Functions include billing, data management, start-up, protocols and map data. An application programming interface facilitates the integration of such functions.

- Synchronization of administration data
- Exchange of information excluding personal data
- Integration of ERP system protocols
- Network route plans
- Location IDs and names
- Geographic coordinates
CONNECTIVITY

Three different types of technology are available to link systems to SAM DISTRICT ENERGY:
- DSL
- Mobile phone network
- SAM-LAN wireless technology

Rental instead of buying
- SAMSON offers attractive rental models as part of an all-included service package for the term of contract.
- Package solutions are available for connectivity to the web portal. Gateways and routers with M2M SIM cards (including data rate) provide a high level of privacy and data security.
- Wireless technology (869 MHz)
- 80 nodes per aggregation node
- One controller per node over RS-232 or TTL
- Remote polling of meters with meter bus interface
- Internet of Things (IoT) using IPv6
- Interface to LoRaWAN™ technology
- AES-256 encryption
- Multiple antenna system
- Controller firmware updates using the aggregation node
- Data transmission with up to 100 kbit/s

---

- Mobile phone network
- Modbus communication using RS-485 and RS-232 or TTL
- Physical inputs and outputs (two digital inputs, one digital output, one analog input)
- Remote polling of meters with meter bus interface
- Firmware updates of connected controllers over the gateway
- Buffer to temporarily store data while the system is offline for a maximum of 14 days (saved in one-minute cycles)

---

- Fixed infrastructure (DSL/LAN)
- Modbus communication using RS-485 and RS-232 or TTL
- Physical inputs and outputs (two digital inputs, one digital output, one analog input)
- Remote polling of meters with meter bus interface
- Firmware updates of connected controllers over the gateway
- Buffer to temporarily store data while the system is offline for a maximum of 14 days (saved in one-minute cycles)
Consulting and start-up

Start-up according to the plug-and-play principle is easily performed in just a few steps. No complicated configuration of end devices or routers is necessary. SAMSON also offers support through certified partners.

Benefits

- Quick and easy installation
- No computer knowledge necessary
- Devices, software and services from a single source
- Traceability
- Pay-per-use billing

Registration
Create your own account (after invitation)

Logon
Sign onto SAM DISTRICT ENERGY

Installation
Install the communication module

Online connection
Register your hardware

Availability
Access your heating systems from anywhere
DATA SECURITY

Data security by design
A holistic approach was adopted for SAM DISTRICT ENERGY to enhance the protection, redundancy and security of data through security procedures.

Holistic data security
- Professionally managed data center certified according to ISO 27001, ISO 27017, ISO 27018 and ISO 9001
- Hosted in Germany and according to German law
- Fully encrypted data transfer
- Personal accounts protected by strong passwords
- Continuous penetration tests (PCI DSS compliance)
- Compliance with the EU General Data Protection Regulation (GDPR)
SAMSON AT A GLANCE

PRODUCTION SITES
- SAMSON Germany, Frankfurt, established 1916
  Total plot and production area: 150,000 m²
- SAMSON France, Lyon, established 1962
  Total plot and production area: 23,400 m²
- SAMSON Turkey, Istanbul established 1984
  Total plot and production area: 11,053 m²
- SAMSON USA, Baytown, TX, established 1992
  Total plot and production area: 9,200 m²
- SAMSON China, Beijing, established 1998
  Total plot and production area: 10,138 m²
- SAMSON India, Pune district, established 1999
  Total plot and production area: 18,000 m²
- SAMSON Russia, Rostov-on-Don, established 2015
  Total plot and production area: 5,000 m²
- SAMSON AIR TORQUE, Bergamo, Italy
  Total plot and production area: 27,684 m²
- SAMSON CERA SYSTEM, Hermsdorf, Germany
  Total plot and production area: 14,700 m²
- SAMSON KT-ELEKTRONIK, Berlin, Germany
  Total plot and production area: 1,060 m²
- SAMSON LEUSCH, Neuss, Germany
  Total plot and production area: 18,400 m²
- SAMSON PFEIFFER, Kempen, Germany
  Total plot and production area: 35,400 m²
- SAMSON RINGO, Zaragoza, Spain
  Total plot and production area: 18,270 m²
- SAMSON SED, Bad Rappenau, Germany
  Total plot and production area: 10,370 m²
- SAMSON STARLINE, Bergamo, Italy
  Total plot and production area: 26,409 m²
- SAMSON VDH PRODUCTS, the Netherlands
- SAMSON VETEC, Speyer, Germany
  Total plot and production area: 27,090 m²

STAFF
- Worldwide 4,300
- Europe 3,300
- Asia 500
- Americas 200
- Frankfurt am Main, Germany 1,800

MARKETS
- Chemicals and petrochemicals
- Power and energy
- District heating and cooling, building automation
- General industry
- Industrial gases
- Food and beverages
- Metallurgy and mining
- Oil and gas
- Pharmaceuticals and biotechnology
- Marine equipment
- Water and wastewater
- Pulp and paper

PRODUCTS
- Valves
- Self-operated regulators
- Actuators
- 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