

# VEXVE iSENSE™

Smart monitoring solutions  
for district energy networks



**VEXVE** / VEXVE  
ARMATURY  
GROUP

# Vexve iSENSE™ smart monitoring solutions

Vexve's iSENSE product family consists of smart monitoring solutions specifically designed for underground district heating and cooling networks. The real-time measurement data provided by iSENSE product family helps to improve network efficiency, provides tools for condition monitoring and enables fast leakage detection.

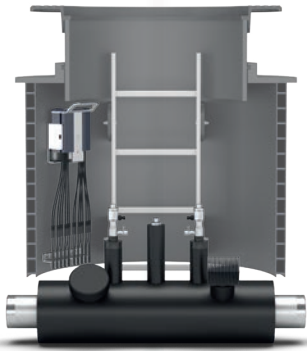
The iSENSE product family is a modular solution, which consists of three products: iSENSE Opti, iSENSE Pulse and iSENSE Chamber. All iSENSE products are suitable for wireless underground usage, are self-powered and can be retrofitted in existing district energy networks. It is possible to choose only one product or easily combine all products into one unit.

Monitoring systems are delivered on a turnkey basis. Vexve's maintenance service takes care of system functionality and device maintenance.

*iSENSE product family uses the LoRaWAN network for data transfer.*



# Vexve iSENSE™ product family



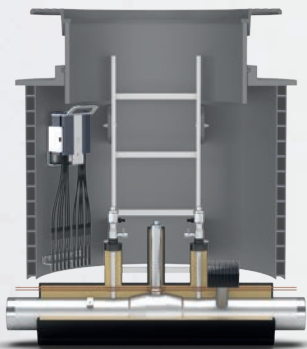
## iSENSE Opti

### Real-time network monitoring

iSENSE Opti enables real-time detection of changing conditions in the underground district energy networks, so that network can be controlled optimally based on accurate, measured data. Areas cooled by high heat loss and unfavorable flow direction can be located and the network can be adjusted based on accurate measurement data.

#### iSENSE Opti sensors measure:

- network pressure
- network temperature
- vibration

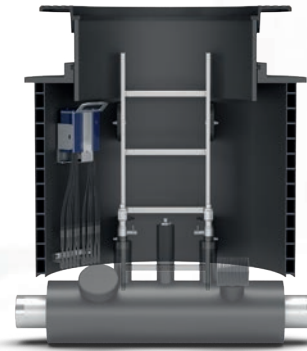


## iSENSE Pulse

### Online leakage detection

iSENSE Pulse enables fast and precise leakage detection based on pulse technology via Nordic alarm wires. Leakage detection is based on reflections of the pulse and the leakage is located based on the traveling time of the pulse in the wires.

- type of alarm wire: Nordic
- the material of alarm wire: copper
- number of connections: 2 (measuring directions), optionally 4 measuring directions



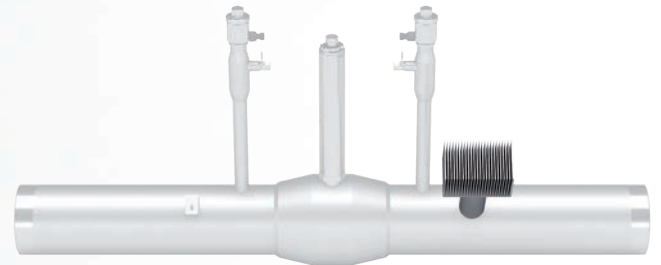
## iSENSE Chamber

### Chamber monitoring

iSENSE Chamber enables effective online chamber monitoring. Problems caused by water accumulating in chambers can be prevented, and maintenance operations can be effectively directed to the right chambers.

#### iSENSE Chamber sensors measure:

- chamber's temperature
- chamber's humidity
- water level



## iSENSE Power

All iSENSE products can be equipped with a self-powered iSENSE Power source. Power generation based on temperature difference eliminates the need for AC power.

## iSENSE Online

Real-time monitoring of all iSENSE products is done through iSENSE Online cloud service. The measured data is sent to iSENSE Online every 15 minutes. The data can be seen with accurate dots and visual charts on the map.



# INSPIRED BY YOUR FLOW

Vexve is a globally leading supplier of valve solutions for heating and cooling needs in urban and industrial environments. Developed for demanding applications, Vexve's valve and control products together with its hydraulic control solutions are used in district energy networks and power plants in addition to the heating and cooling systems of all sizes of buildings.

Our vision is to be a committed and responsible technology partner for heating and cooling. Together we can create innovative and efficient energy infrastructures that support the sustainable development of the modern smart city.

Vexve is a part of Vexve Armatury Group, which is the leading European provider of valve solutions for the energy sector.



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