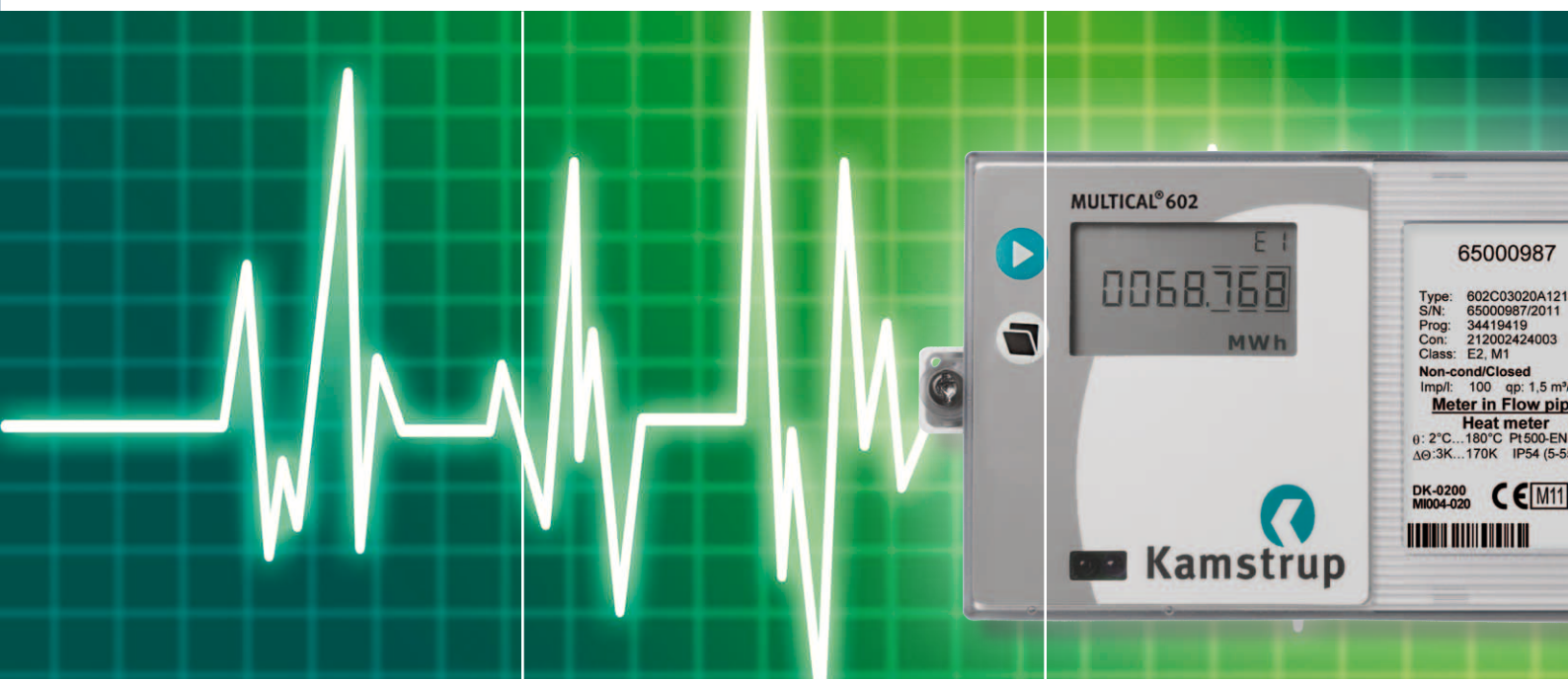


# MULTICAL® 602

Heat metering with ULTRAFLOW® 54



## Unlimited communication

MULTICAL® 602 offers you a complete range of communication modules. The meter can be fitted with LON, SIOX, M-Bus, a data module and the new solutions Metasys N2 and Ethernet/IP for wired communication. If the meter is to be integrated in a wireless network, you can select radio, Wireless M-Bus, ZigBee, or new options like: GSM/GPRS or High-Power RadioRouter with High-Power supply. – MULTICAL® 602 provides unlimited communication.

## Sharp analysis

MULTICAL® 602 is your guarantee that power supply, leakages and bursts are monitored and appear in the display in the form of an info code. An info logger registers and stores all irregularities and changes. Furthermore MULTICAL® 602 is fitted with an integral RTC and saves yearly, monthly, daily and hourly loggers, which you easily read and analyse as part of your daily operations optimisation.

## Measurable saving

In case of power failure data is backed up, thus securing billing of consumption data. If the meter is fitted with a battery, the battery lifetime is prolonged to 13 years incl. Wireless M-Bus reading. MULTICAL® 602 is your guarantee that consumption data is accurately and constantly billed during the meter's whole lifetime without need for service checks. The operating costs are minimal and cost saving thereby a reality.



## MULTICAL® 602 and ULTRAFLOW® 54 – power your communication

### The calculator MULTICAL® 602

Kamstrup's heat meters are based on state of the art heat technology.

The advanced calculator, MULTICAL® 602, is used together with the flow sensor, ULTRAFLOW® 54, as well as two temperature sensors for calculation of energy and measurement of flow, power and temperature - with the best measuring accuracy on the market. The energy calculations and flow, power and temperature measurements are data logged and can be read direct from the display or through remote reading in a wireless network.

### The flow sensor ULTRAFLOW® 54

The ULTRAFLOW® 54 range for heat metering includes flow sensors between qp 0.6 and qp 1,000 m<sup>3</sup>/h.

ULTRAFLOW® 0.6 to 100 m<sup>3</sup>/h registers the heat consumption in all water based installations with medium temperatures between 15°C and 130°C, whereas the larger flow sensors qp 150 to 1,000 m<sup>3</sup>/h are approved for temperatures from 2°C to 150°C

ULTRAFLOW® 54 is based on ultrasonic measurement and is fitted with a new power-saving microprocessor. Ultrasonic measurement is a long-term stable and accurate measuring principle which guarantees the highest measuring quality and reliability on the market.

The threaded sensors from qp 0.6 up to qp 10.0 m<sup>3</sup>/h are made of brass, whereas all flange sensors are made of stainless steel with minimum lead content in line with increasingly stringent environmental demands. In order to ensure immunity to flow disturbances – and thereby obtain the most accurate measurements – sensors up to DN20 apply the parallel ultrasonic principle, whereas sensors size DN25 to DN100 apply the triangular principle.

The measuring principle is the bidirectional ultrasonic principle, which secures pinpoint accuracy and at the same time counteracts flow disturbances.

The built in signal converter, which is placed on the flow sensor, transfers calibrated pulses to the calculator.

## Types of communication



## High demands require high standards

### Reliability and long-term stability

The unique temperature measuring circuit and the accurately matched temperature sensors guarantee reliable measuring results, even at temperature differences below 1K. The long-term stability and accuracy of the flow sensor are not influenced by the flow velocity. Even if the nominal velocity is doubled, the long-term stability and accuracy of the flow sensor remain unchanged.

### High-Power

MULTICAL® 602 has been designed for communication via GSM/GPRS and Ethernet too. Furthermore, the High-Power RadioRouter module fulfils the demand for increased transmitting power compared to traditional radio communication. These three communication modules require a High-Power supply module, which supplies more power than traditional supply modules. Kamstrup's High-Power supply module applies Switch Mode technology and is available in 230 VAC or 24 VAC version.

### Info codes

MULTICAL® 602 constantly monitors a number of key functions. In case of power failure, leakage, burst, or if the flow sensor has been installed in the wrong flow direction, an info-event counter shows the number of changes.

An info logger saves the latest 50 changes, of which the 36 latest changes can be displayed. Furthermore, MULTICAL® 602 is fitted with an error hour counter which registers the hours during which the info code exceeds zero.

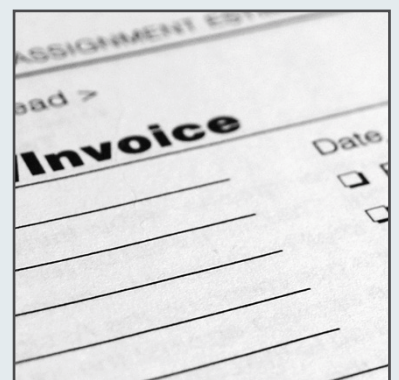
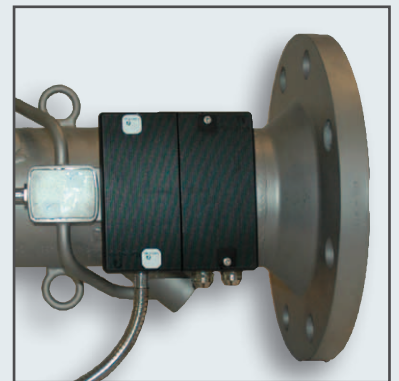
### Data loggers

MULTICAL® 602 stores yearly, monthly, daily, and hourly data with a logging depth of 15 years, 36 months, 460 days and 1392 hours respectively. Furthermore, the meter is fitted with a programmable data logger and info loggers. Analysis of these data loggers is the key to troubleshoot possible pressure loss, reveal manipulation of the meter and analyse the amount of energy consumed during which periods with a view to reducing energy consumption.

### Billing

Guarantee for accurate meter data is decisive when it comes to the consumer's reliance in consumption billing. Wireless reading using one of Kamstrup's network solutions guarantees you reliable meter data, operation and data security. Thus, MULTICAL® 602 and ULTRAFLOW® 54 provide you with correct energy consumption any time, which makes the consumers satisfied and secures the utility its income.

**MULTICAL® 602 is also available for cooling metering.**





## Our ultrasonic metering solution – your **ultrastrong** partner

Kamstrup is the world's leading producer of energy meters and system solutions for consumption measurements.

Our core areas are measurement of heat, cooling, water, electricity and gas. Furthermore, in co-operation with you we develop AMR and service solutions that are customised for your company.

We are represented in more than 60 countries worldwide by Kamstrup sales and subsidiary offices or by our distributors.

All employees work hard to offer your company the very best service and to respond to global market information provided by our trusted partners.

In this way we maintain a strong mutual co-operation.

### **The Kamstrup brand**

– when you demand quality, reliability, innovation and partnership.

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