

# MULTICAL® 601

Heat metering with ULTRAFLOW® 54



## Supreme operational surveillance

is your direct benefit of the new communication channel between ULTRAFLOW® 54 and MULTICAL® 601. It provides you with 16 different info codes that are monitored in the display in case of faulty installation, cavitation or leak. This indispensable surveillance tool will save you from expensive and time-consuming service visits.

## Supreme longevity

requires provable long life stability and exceptional accuracy – exactly what you get with Kamstrup's heatcouple. ULTRAFLOW® 54 has been proved ultimately stable against flow disturbances in the Swirl-Generator test and meets the requirements of the 2400h + 300h long time stability test – even when exposed to poor water quality.

## Supreme investment

in Kamstrup's long-life ultrasonic flow sensors and advanced calculators pay off. With MULTICAL® 601 and ULTRAFLOW® 54 you are guaranteed the perfect couple for your heat metering. Long life stability and supreme accuracy contribute to keeping your annual operating costs at a minimum and secure the ultimate solution to trustworthy billing.



## MULTICAL® 601 and ULTRAFLOW® 54 – the perfect couple for your heat metering

### The calculator MULTICAL® 601

Kamstrup's heat meters provide you with state of the art heat technology. The advanced calculator, MULTICAL® 601, is used together with the market's widest range of flow sensors, and even at extremely low temperature differences, the measuring accuracy is second to none.

### The flow sensor ULTRAFLOW®

The ULTRAFLOW® range comprises flow sensors between qp 0.6 and 1000 m<sup>3</sup>/h. ULTRAFLOW® is used for measurement of heat in all water based plants with flow temperatures from 15°C to 130°C.

The measurement conversion is performed by Kamstrup's unique ASIC design, providing the best functionalities like absolute time measurements and self-diagnostics.

Accuracy Class 2 or 3, the wide dynamic measuring range (qp/qi 100:1) and the high permanent overload capability (qs/qp 2:1) are standard features.

Our heat meters are divided into two groups by size and construction type:

### Heat meters – qp 0.6 to 100 m<sup>3</sup>/h

The new ULTRAFLOW® 54 is made of high grade brass or stainless steel and contains less lead in line with the increasing environmental demands. In order to ensure immunity against flow disturbances – and thus obtain the most precise measurements – meters DN15-20 utilise the single beam ultrasonic principle, while meters DN25-100 use the triangle beam principle.

As the first heat couple, MULTICAL® 601 and ULTRAFLOW® 54 are approved for both domestic and industrial applications (Class E1 and E2).– You get one heat couple for all installation environments.

### Heat meters – 150 to 1000 m<sup>3</sup>/h

The measuring method used in the large heat meters is the dual beam ultrasonic principle which ensures a very high accuracy and furthermore provides the flow meters with high resistance against flow disturbances. The encapsulated signal converter, located on the flow meter, transmits calibrated pulses to the calculator.



MULTICAL® 601



Flow sensors ULTRAFLOW® 54  
qp 0.6 to 100 m<sup>3</sup>/h



Flow sensors ULTRAFLOW®  
qp 150 to 1000 m<sup>3</sup>/h

## High demands require high standards

### Operational surveillance

ULTRAFLOW® 54 constantly surveys and reports to MULTICAL® 601 whenever serious errors occur in the installation. As a new feature, ULTRAFLOW® 54 reveals and reports leakage, wrong meter factor, cavitation and wrong flow direction. This supreme operational surveillance based on 16 info codes saves you from expensive and unnecessary service visits.

### Ultrasonics

More than 15 years' experience has proved that the ultrasonic principle is the most reliable in the long term. The flow is measured using bidirectional ultrasonic technique based on the transit time method. Two ultrasonic transducers are used to send the sound signal both against and with the flow direction.

### Memory

MULTICAL® 601 stores all consumption data for 460 days, 36 months and 15 years – hourly information is available as an optional module. Analysis of these registers permits closer understanding of energy usage through trouble-shooting, diagnostics and tamper detection.

### Accuracy

The unique temperature measuring circuit and precisely paired sensors guarantee accurate measurements, even at temperature differences below 1K. The long-term stability and accuracy of the flow meter are maintained even at flow rates twice the nominal flow rate.

### Dual Interface

MULTICAL® 601 is able to perform data communication on two ports simultaneously, e.g. LonWorks for Building Management Systems and M-Bus for billing purposes. This ensures ultimate data reliability at the lowest possible cost.

### Remote reading

MULTICAL® 601 provides you with reliable remote reading options such as radio, GSM/GPRS, M-Bus, LonWorks or one of Kamstrup's network solutions, which deliver meter data back to a central system with no human intervention. The data safety is the Alpha and Omega of the Kamstrup meter protocol as it solely includes encrypted data.

### Long time stability

ULTRAFLOW® 54 is a long-life flow sensor without comparison. The acknowledged independent tests, the '2400h + 300h long time stability test' and the AGFW, give top marks to ULTRAFLOW® 54 for its supreme stability. In addition, the Swirl-Generator test has proved the ULTRAFLOW® 54 ultimately stable against flow disturbances and resistant to wear.

### Billing

Accurate measurements aim at enhancing the consumers' confidence in the accuracy of billing. This leads to reduced consumer complaints as well as reduced revenue leakage. The perfect couple MULTICAL® 601 and ULTRAFLOW® – informs you of accurate energy usage and provides you with trustworthy billing, any time.





## Our ultrasonic heat solution – your **ultra** strong partner

Kamstrup is a world leading manufacturer of energy meters and system solutions for energy metering.

We operate within heat, cooling, water, electricity and gas measuring and offer customized AMR solutions and metering services.

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

All employees work hard to offer the very best service and to respond to global market information provided by our trusted partners. In this way, we maintain a strong mutual cooperation.

### The Kamstrup brand

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

