

# MULTICAL® 801

Heat and cooling metering for trade and industry



## High-end industrial metering

requires accurate, stable and long life energy meters with a multitude of communication and remote reading features. As yet another market demand, industrial meters have to be proved resistant to dust and moisture. The IP67 approved MULTICAL® 801 for heat and cooling meets these requirements – in a single box solution.

## High-end single box solution

alias MULTICAL® 801 provides you with accurate flow metering up to 30,000 m<sup>3</sup>/h and a built-in valve controller regulating flow and consumption. With leakage control, new enhanced datalogger, power supply back-up and illuminated display, you are guaranteed the most reliable energy meter, even when installed in dusty and humid environments.

## High-end performance

and low operational costs are your direct benefits of MULTICAL® 801. The industrial meter is easy to install, maintenance free and based on an open platform, making your choice of communication modules most flexible. MULTICAL® 801 with its outstanding accuracy and stability is our guarantee for your trustworthy billing.



## MULTICAL® 801 – the perfect single box solution for industrial metering

### The calculator MULTICAL® 801

Kamstrup's energy meters provide you with state of the art heat and cooling metering technology. The advanced calculator, MULTICAL® 801, 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.

MULTICAL® 801 sets new standards for flexible and reliable energy metering within the industrial sector. Even when exposed to dusty, humid and wet conditions, the meter has been tested and proved ultimately stable and accurate according to the IP67 requirements. Temperature sensor and flow meter cables of up to 100 meters meet your demand for flexible installation in industrial applications, not to forget the illuminated display that enables you to read the meters installed in unlit buildings.

MULTICAL® 801 provides you with four analogue outputs for remote indication of power, flow, T1 and T2, as well as two pulse outputs for accumulated energy and volume.

### The flow sensor ULTRAFLOW®

The ULTRAFLOW® range comprises flow sensors between  $q_p$  0.6 and 1,000  $m^3/h$ . ULTRAFLOW® is used for measurement of heat or cooling in all water based plants with flow temperatures from 15°C to 130°C for heat, and from 2°C to 50°C for cooling.

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 measurement range ( $q_p/q_i$  100:1) and the high permanent overload capability ( $q_s/q_p$  2:1) are standard features of all our flow sensors.

### Flow sensors larger than $q_p$ 1,000 $m^3/h$

By connecting MULTICAL® 801 to other flow sensors than ULTRAFLOW®, you can measure flows in medium and large sized industrial installations with up to 30,000  $m^3/h$  and still benefit from the outstanding qualities of MULTICAL® 801.



MULTICAL® 801



Flow sensors ULTRAFLOW® 54  
 $q_p$  0.6 to 40  $m^3/h$



Flow sensors ULTRAFLOW®  
 $q_p$  60 to 1,000  $m^3/h$

## High demands require high standards

### **IP67 protection**

The industrial heat and cooling meter, MULTICAL® 801, meets the IP67 requirements to extremely robust design and functionality. The IP67 sealing proves the calculator resistant to dust, moisture, and water. As part of the IP67 test, MULTICAL® 801 has been temporarily immersed in water one metre deep for 30 minutes and been proved water resistant. The IP67 sealed MULTICAL® 801 – your guarantee for high-end industrial metering.

### **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. Ultrasonic transducers are used to send the sound signal both against and with the flow direction.

### **Power supply back-up**

In case of power failure, MULTICAL® 801 with power supply back-up up to one year guarantees flow metering, temperature measurement, energy calculation, real time clock as well as data logger. MULTICAL® 801 stores all consumption data for 460 days, 36 months and 15 years. Analysis of these registers permits closer understanding of energy usage through troubleshooting, diagnostics and tamper detection.

### **Accuracy**

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

### **Leakage control**

MULTICAL® 801 equipped with flow meters in both flow and return pipes generates your leakage control and submersion surveillance on heating systems as well as cold water pipes. As another feature, impulses from connected water meter reveal leakages in your tap water system. This high-end warning system reduces your service and repair costs, limits possible damages and helps to protect the environment.

### **Remote reading**

MULTICAL® 801 provides you with many communication channels for remote reading such as radio, GSM/GPRS, M-Bus, BACnet, Wireless M-Bus, Ethernet, Metasys N2, Zigbee or one of Kamstrup's network solutions which deliver meter data without human intervention. The data safety is the Alpha and Omega of the Kamstrup meter protocol, as it solely includes CRC-data [cyclic redundancy check].

### **Built-in valve controller**

The single box solution also offers you an automatic built-in valve controller. The flow controller is easily put into operation by turning the presetting scale of MULTICAL® 801 to the desired flow rate. Once the flow rate has been set, max flow is maintained across the valve to regulate consumption and to ensure that maximum flow is not exceeded.

### **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 metering couple – MULTICAL® 801 and ULTRAFLOW® – informs you of accurate energy usage and provides you with trustworthy billing, any time.



## Our ultrasonic metering 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 and electricity measuring. Furthermore we, in cooperation with you, develop AMR and service solutions that are customized to your company.

We are represented in 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 cooperation.

### The Kamstrup brand

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

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## Think forward