MULTICAL® 402 heat

Compact energy meter for housing and light industry

Compact design

MULTICAL® 402 is the compact meter with minimum installation requirements that offers you maximum functionality at a competitive price. You can easily read both current, accumulated and target values direct from the display or via hand-held terminal. All log values can be read and analysed via the PC program LogView. Pulse outputs for energy and volume guarantee simple connection to building automation. Alternatively, you can choose two pulse inputs for connection of water meter.

Extended longevity

MULTICAL® 402 is maintenance-free and the integral flow sensor ASIC guarantees you the most accurate compact meter on the market. The 16-year D-cell battery is a supply source that will last as long as the meter. Alternatively, you can choose a 6-year 2xAA-cell battery to be replaced when the meter needs reverification. Thus, the consumers obtain the most accurate consumption billing and the operating costs are reduced.

Wireless freedom

Remote reading of the compact meter MULTICAL® 402 means wireless freedom to quickly obtain optimal data safety and top flexibility. MULTICAL® 402 and Wireless M-Bus provide you with a Plug and Play installation – easy to mount. Wireless M-Bus is one-way radio communication with open protocol. MULTICAL® 402 with Wireless M-Bus is read by a Wireless M-Bus Reader. You can also read the meter by means of a USB Meter Reader, a hand-held terminal or AMR.

MULTICAL® 402
– compact on the outside, multifunctional on the inside

The compact meter MULTICAL® 402

MULTICAL® 402 is a compact meter which consists of a calculator, a flow sensor based on ultrasound and two temperature sensors. According to EN1434 this means in practice that flow sensor and calculator of a compact meter must not be separated. If flow sensor and calculator have been separated and the seals have, thus, been broken, the meter needs reverification.

MULTICAL® 402 calculator

Kamstrup's calculators are based on state of the art heat technology. The advanced calculator is used together with the widest flow sensor range on the market, and even at minimum temperature differences the measuring accuracy is unequalled.

Ultrasonically based flow sensor

More than 20 years' experience has proved that the ultrasonic principle is most reliable in the long run. The volume is measured using bidirectinal ultrasonic technique according to the transit time method. Simultaneously, two ultrasonic transducers send sound signals with and against the flow direction respectively.

The flow sensor range for MULTICAL® 402 comprises meters between qp 0,6 m³/h and qp 15 m³/h. MULTICAL® 402 is used for heat, cooling and combined heat and cooling measurement in all water-based systems with temperatures from 2°C to 130°C. The meter registers the heat consumption in all water-based heating installations with temperatures from 15°C to 130°C and in combined heat and cooling installations from 2°C to 130°C.

The unique temperature measuring circuit and the accurately matched Pt500 temperature sensors guarantee reliable measuring results. 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 are unchanged.

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

MULTICAL® 402 with threaded sensor

MULTICAL® 402 with flanged sensor

High demands
require high standards

Wireless M-Bus

Wireless M-Bus has been designed and optimised to read the battery supplied MULTICAL® 402 and obtain 16 years' battery lifetime. Wireless M-Bus is one-way radio communication with open protocol. The communication between meter and module is based on the KMP (Kamstrup Meter Protocol), which is also an open protocol. MULTICAL® 402 with Wireless M-Bus is read by a Wireless M-Bus Reader. Subsequently, data is automatically transferred to the corresponding AMR software and exported to a billing program.

Pulse outputs CE/CV Pulse inputs VA/VB

MULTICAL® 402 can be equipped with pulse outputs for energy (CE) and volume (CV) respectively, for remote accumulation in e.g. a BMS system. Instead of two pulse outputs the compact meter is available with two pulse inputs, VA and VB, for collection and remote accumulation of pulses from two water meters with Reed or electronic pulse outputs.

Autoconfiguration

Changing between pulse inputs and pulse outputs does not require reconfiguration of the meter. MULTICAL® 402 is automatically configured for pulse outputs or pulse inputs depending on module choice. Three types of plug-in modules are available: Without pulse inputs/outputs, with pulse outputs for energy (CE) and volume (CV) and with pulse inputs (VA and VB) for accumulation of pulses from water meters.

Data loggers

MULTICAL® 402 saves all consumption data for 15 years, 36 months and 460 days and nights. All log values can be read via Kamstrup's hand-held terminal MULTITERM Pro or the PC program LogView. Furthermore, the info-event logger saves the latest 50 events. The 36 newest events can be displayed. Analysis of these registers provides a better overview of the energy consumption through troubleshooting, diagnostics and tamper detection.

Battery supply

In addition to 230 VAC or 24 VAC mains modules MULTICAL® 402 is available with battery supply. You can select the D-cell battery with 16 years' lifetime, which lasts as long as the meter, or a 6-year 2xAA-cell battery, which is replaced when the meter needs reverification. You can easily replace all supply modules without breaking the verification seal as MULTICAL® 402 is fitted with a connector for the supply.

Set/reset function

By means of the calculator's two front keys the installer can adjust/reset the following readings: Time, date, pulse counter VA/VB, meter number of connected meter VA/VB, and primary M-Bus address.

Remote reading

In addition to wireless and wired M-Bus you can remote read MULTICAL® 402 by means of radio via USB Meter Reader or hand-held terminal MULTITERM Pro. Furthermore, MULTICAL® 402 can be part of an AMR solution (Automatic Meter Reading), which automatically reports data to a central system. An AMR system covers the utilities' need for large-scale reading.

Billing

Guarantee for accurate meter data is decisive when it comes to the consumer's reliance in consumption billing. It gives consumer satisfaction and secures payments. The long-term stable and ultraprecise compact meter, MULTICAL® 402, provides you with correct energy consumption any time, and the consumer can always rely on the correctness of the bill.

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 and electricity. 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.

Kamstrup A/S
Industrivej 28, Stilling
DK-8660 Skanderborg
T: +45 89 93 10 00
F: +45 89 93 10 01
info@kamstrup.com
kamstrup.com

Think forward