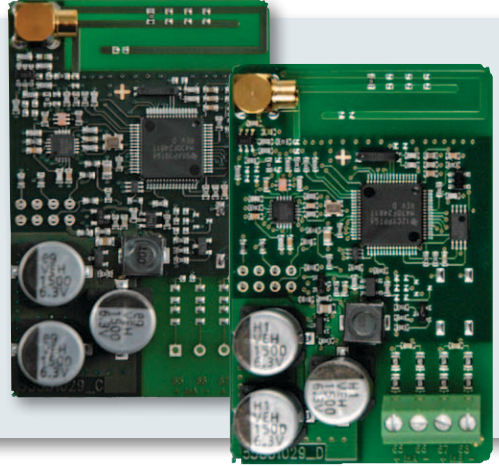


Wireless M-Bus, C mode

modules for MULTICAL® 402

DATA SHEET

- Wireless reading every 16 seconds
- Up to 16 years battery lifetime
- Stable and fast reading
- Unlicensed European frequency
- Standardised radio protocol
- Internal antenna and external antenna connection



Application

Optimal communication

The Wireless M-Bus modules are designed for use in Kamstrup's heat, cooling and combined heat/cooling meters: MULTICAL® 402.

The modules automatically find the meter type in which they are installed and are ready for communication without further configuration within 16 seconds.

The Wireless M-Bus modules use a comprised communication protocol designed with a special view to hand-held solutions by which fast, stable and safe data communication is necessary. In addition, they offer a very long battery lifetime. We call this comprised communication protocol C mode. It gives savings of up to 50% of the energy consumption compared to the existing modes in the standard, and this means an extension of the meter's battery lifetime

Even though the modules are designed for hand-held solutions, they are also prepared for forming part of network solutions such as a Radio Link Network.

Standardised communication

Kamstrup is actively participating in the standardisation work for updating the EN13757-4 standard, also known as the "Wireless M-Bus standard", and C mode is now part of this European standard on equal terms as the already existing protocols (modes) such as T mode and S mode.

C mode differs from the other modes by comprising and removing unnecessary and redundant data that are sent from the meter every 16 seconds.

Only every 8 package (approx. every 2 minutes) contains a complete data package, whereas the 7 intervening data packages only contain raw data.

Secure communication

In addition to stable and fast communication as well as long battery lifetime, C mode also offers a high data security.

The security does not only apply to the utility that, with the individual encryption keys and the AES128 encryption algorithm of Kamstrup's meters, is secured against data being tampered with or in any other way being changed on its way from the meter to the database.

The security also applies to the end-user who does not need to worry about whether the meter data can be read, misused or in any other way be connected with the individual meter (data privacy) even though data are sent from the meter every 16 seconds according to an open European communication standard.



Wireless M-Bus, C mode

module for MULTICAL® 402

DATA SHEET

Technical data

Frequency	868.95 MHz (EU licence-free area 868-870 MHz)
Communication	Wireless M-Bus, C mode, one-way communication
Standard	EN13757-4
Transmission interval	16 seconds
Transmission strength	10 mW
Battery lifetime	Up to 16 years
Range	
– internal antenna	Up to 200 meters
– external antenna	Up to 500 meters
Update interval (data)	Every 2 minutes

Mechanical data

Dimensions (L X W x D)	64 x 42 x 12 mm
Temperature range	-40°C...+ 70°C

Markings

R&TTE	EN300 220 – class 2 EN301 489
CE marked	

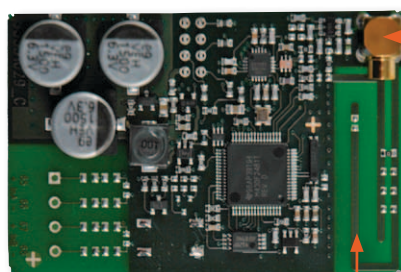
Wireless M-Bus, C mode

module for MULTICAL® 402

DATA SHEET

Wireless M-Bus module, standard registers

Module



External antenna connection

Internal antenna

Data telegram

Current data	
Serial number	✓
Heat energy E1 and/or cooling energy E3	✓
Energy E8 m ³ x T1	✓
Energy E9 m ³ x T2	✓
Volume V1	✓
In A	
In B	
Flow	✓
T1	✓
T2	✓
Yearly max power	
TA2	
TA3	
Info code	✓
Operating hour counter	✓
Date	✓
Monthly data	
Heat energy E1 and/or cooling energy E3	✓
Volume V1	✓
In A	
In B	
Date	✓

Order data

Description

Wireless M-Bus module, standard registers

External antenna, mini triangle antenna, 2.5 m cable

Type No.

402003000000

6699 448

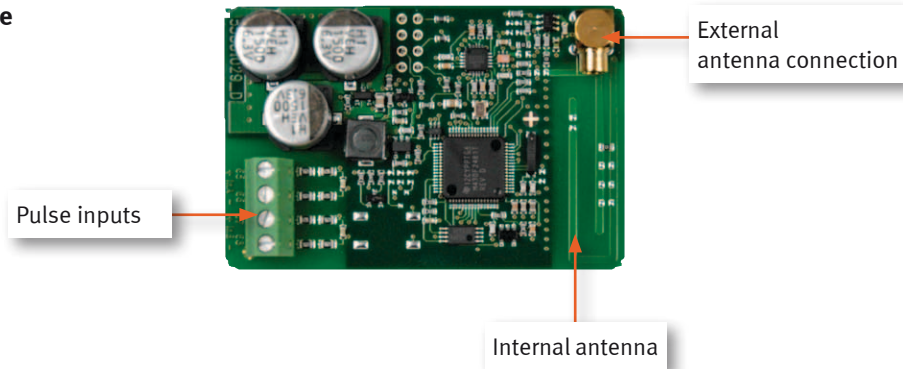
Wireless M-Bus, C mode

module for MULTICAL® 402

DATA SHEET

Wireless M-Bus module, alternative registers

Module



Data telegram

Current data	
Serial number	✓
Heat energy E1 and/or cooling energy E3	✓
Energy E8 m ³ x T1	✓
Energy E9 m ³ x T2	✓
Volume V1	✓
In A	✓
In B	✓
Flow	✓
T1	✓
T2	✓
Yearly max power	✓
TA2	✓
TA3	✓
Info code	✓
Operating hour counter	✓
Date	✓
Monthly data	
Heat energy E1 and/or cooling energy E3	✓
Volume V1	✓
In A	✓
In B	✓
Date	✓

Order data

Description

Wireless M-Bus module, alternative registers
 External antenna, mini triangle antenna, 2.5 m cable

Type No.

4020035000000
 6699 448