

# M-Bus Modules for MULTICAL® 61/601/602 with standard registers

## DATA SHEET

### ■ Base module

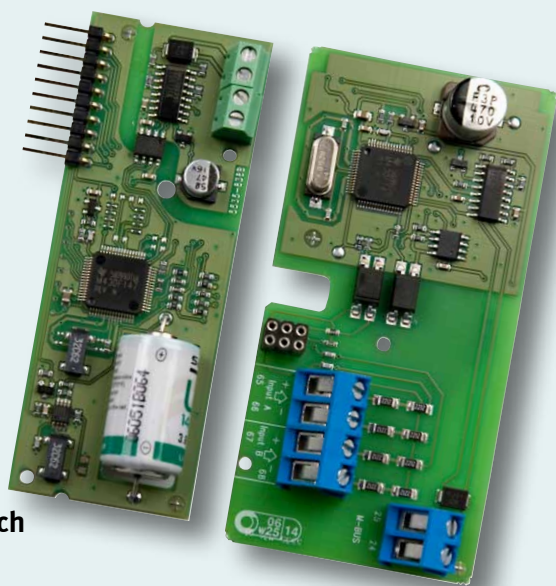
- Supplied via M-Bus Master
- Two pulse inputs
- 300/2400/9600 baud
- Programming of primary address, M-Bus ID number, Date/time and pulse inputs via the M-Bus Network
- Collision detection

### ■ Top module

- Supplied via MULTICAL®
- Integral RTC (Real Time Clock)
- 300/2400 baud
- Programming of primary address and M-Bus ID number via M-Bus network

### ■ Both modules support primary/secondary/enhanced secondary addressing and wild card search

### ■ Fulfil EN 13757



## Application

Kamstrup have developed two M-Bus modules for MULTICAL® 61/601/602, a base module and a top module.

The base module is mounted in the meter's module area, whereas the top module is clicked into place in the calculator top itself.

The base module is used for remote reading and programming of MULTICAL® 61/601/602.

The module can also be used with MULTICAL® 801.

The base module is galvanically separated from the meter and is sup-

plied via the M-Bus master. Thus, the supply of the meter is not burdened by the module. The module is fitted with two pulse inputs for reading other meters, e.g. water or electricity meters.

By means of the M-Bus base module primary address, M-Bus ID number, date/time and pulse inputs (In-A and In-B) can be programmed via the M-Bus network.

The top module is used for remote reading of MULTICAL® 61/601/602.

The top module is galvanically separated from the M-Bus network. It is

supplied by the meter, which must therefore be mains supplied (24/230 VAC).

The top module also has an RTC-circuit (Real Time Clock) with internal battery supply. The RTC circuit backs up the internal clock in MULTICAL® 61/601.

The top module's primary address and M-Bus ID number is programmable via the M-Bus network independent of the M-Bus base module.

The primary and secondary M-Bus addresses of both top and base modules are displayed.



# M-Bus Modules for MULTICAL® 61/601/602

with standard registers

DATA SHEET

## Address fields

### Primary (000-250)

When supplied from Kamstrup, M-Bus modules will automatically use the 2-3 last digits of the meters' customer number as their primary address. Otherwise there is no bond between customer number and M-Bus address. MULTICAL® 61/601/602 has separate registers for the primary M-Bus Addresses of both top and base modules.

### Secondary (00000000-99999999)

Creating the secondary address the last eight digits of the customer number are used as M-Bus ID number. Furthermore, eight additional digits from the module's software, incl. Kamstrup's manufacturer's ID, can be added, thus extending the secondary address to 16 digits.

### Enhanced secondary (00000000-99999999)

The meter's serial number is used for enhanced secondary addressing. This number is unique of each meter and cannot be changed after production.

### Wild card search

Some or all digits of the M-Bus modules' secondary or enhanced secondary addresses can be replaced by wild cards.

The M-Bus modules will not compare the wild cards to the corresponding digits of their own secondary or enhanced secondary addresses, and it is possible to communicate with the M-Bus module if the other digits fit.

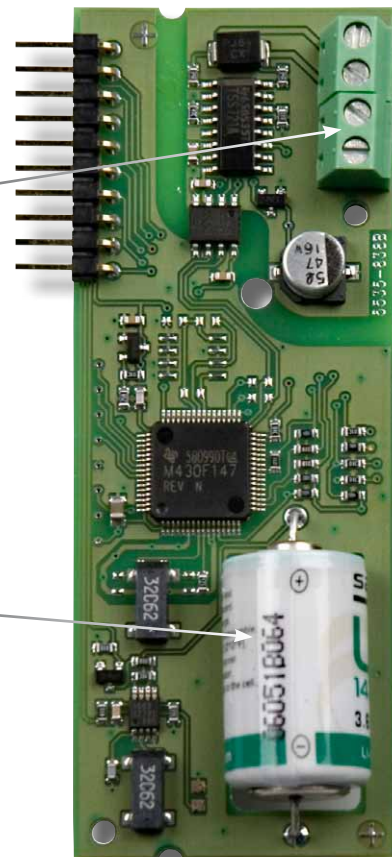
## Connections

### Top module

#### M-Bus connection

Terminal 24 M-Bus connection  
Terminal 25 M-Bus connection

#### RTC-circuit with battery supply



# M-Bus Modules for MULTICAL® 61/601/602

with standard registers

DATA SHEET

## Connections

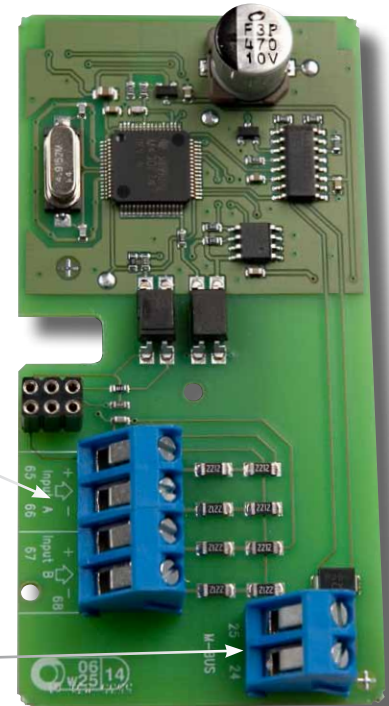
### Base module

### Pulse inputs

- Terminal 65 Pulse input A/In-A (+)
- Terminal 66 Pulse input A/In-A (-)
- Terminal 67 Pulse input B/In-B (+)
- Terminal 68 Pulse input B/In-B (-)

### M-Bus connections

- Terminal 24 M-Bus connection
- Terminal 25 M-Bus connection



## Technical data

### Data telegram

M-Bus data	Actual data	Target data Default settings: yearly values	Manufacturer specified data
Meter number	Serial No.	Energy E1	Info
Manufacturer ID	Energy E1	Volume	Energy input E8
Versions ID	Volume	Max. power	Returned energy E9
Meter type	Hour counter	Max. flow	TL2
Reading counter	T <sub>forward</sub>	TA2	TL3
Configuration	T <sub>return</sub>	TA3	Prog. No.
	T <sub>diff.</sub>	In-A	Config. No. 1
	Power	In-B	Config. No. 2
	Max. power	Cooling Energy E3	Meter No. 1
	Flow	Date	Meter No. 2
	Max. flow		Meter type + revision
	TA2		Module type + revision
	TA3		
	In-A		
	In-B		
	Cooling Energy E3		
	Date/Time		

# M-Bus Modules for MULTICAL® 61/601/602

with standard registers

DATA SHEET

## Technical data

---

### Physical features

Power consumption	1 unit load (1.5 mA) per M-Bus Slave
Supply	
– base module	From M-Bus Master
– top module	From meter (24/230 VAC)
$R_{in} / C_{in}$	410 $\Omega$ /0.5 nF
Max. cable resistance	29 $\Omega$ / 180 nF per pair
Temperature arear	0 - 60°C

### Markings/approvals

EN 1434  
EN 13757  
CE approval

## Ordering

---

Description	Type No.
M-Bus base module for MULTICAL® 61/601/602/801	670020000000
M-Bus top module for MULTICAL® 61/601/602	670700000000
M-Bus Master MultiPort 250D	MBM-M210000