DATASHEET

M-Bus Modules for MULTICAL® 601

Base module

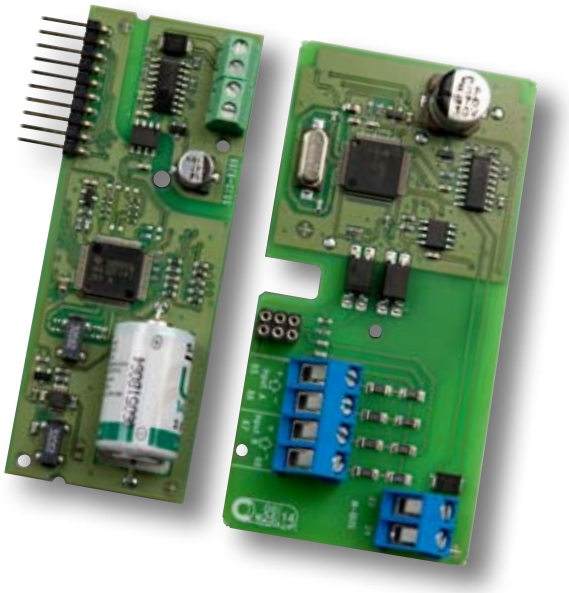
- **Supplied via M-Bus Master**
- **Two pulse inputs**
- **300/2400/9600 baud**
- **Programming of primary address, M-Bus ID number, Date/time and pulse inputs via the M-Bus Network**
- **Collision detection**

Top module

- **Supplied via MULTICAL® 601**
- **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® 601, 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® 601.

The base module is galvanically separated from the meter and is supplied 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® 601.

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 meter's internal clock.

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.

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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® 601 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.

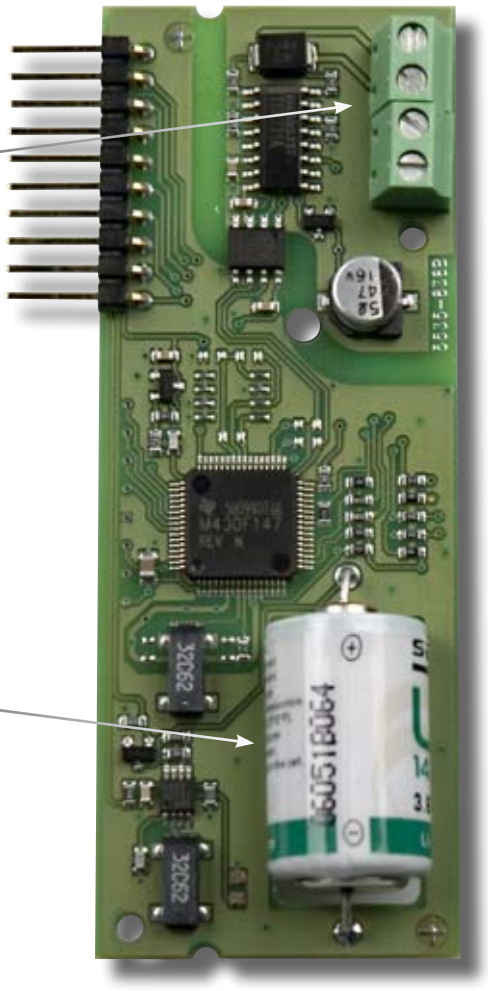
The M-Bus modules will not compare the wild cards to the corresponding digits of their own secondary or enhanced secondary addresses, and it is possible to communicate with the M-Bus module if the other digits fit.

Connections

Top module

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

RTC-circuit with battery supply



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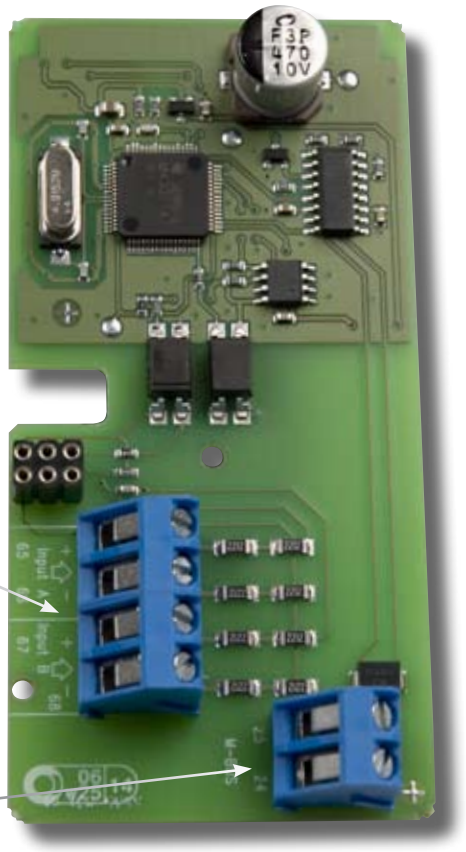
Connections

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

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Technical data

Data telegram

Serie No.	TA2*
Energy	TA3*
Volume	In-A*
Hour counter	In-B*
$T_{forward}$	Cooling Energy*
T_{return}	Date*
$T_{diff.}$	Info
Power	Energy input E8
Max. power	Returned energy E9
Flow	TL2
Max. flow	TL3
TA2	Prog. No.
TA3	Config. No. 1
In-A	Config. No. 2
In-B	Customer No. 1
Cooling Energy	Customer No. 2
Date/Time	Meter type + revision
Energy*	Module type + revision
Volume*	Module status**
Max. power*	
Max. flow*	

*) Target data

**) Future Option

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 Ω/0.5 nF
Max. cable resistance	29 Ω/ 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® 601	670020000000
M-Bus top module for MULTICAL® 601	670700000000
M-Bus Master (Relay) 60 x M-Bus modules	5920 141
M-Bus Master (Relay) 250 x M-Bus modules	5920 142
M-Bus Master (Kamstrup) only primary addressing	66981xx xxx

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