

Logger Profiles and Datagrams

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MULTICAL® 403

MULTICAL® 603

MULTICAL® 803

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15.6	Diagnostic 1 [RR 15]	97			

1 List of words, symbols and abbreviations

Word/symbol	Meaning
A $\overline{\omega}$.	Average
BCD	Binary Coded Data
C	Cooling
CP/COP	Coefficient of Performance
Err.	Error
H	Heat
H/C	Heat/Cooling
HCC	Heat Cooling Coding
INT	Integer value, e.g. INT4 is a 4 Byte integer value
M-Bus	Wired M-Bus
Max	Maximum
Min	Minimum
qp	Permanent/approved nominal flow
Std.	Standard
Temp.	Temperature
V	Volume (Warm and Cold water)
wM-Bus	Wireless M-Bus
$\Delta\Theta$	Temperature difference of inlet and outlet

2 Introduction

Kamstrup MULTICAL® 403, MULITCAL® 603 and MULITCAL® 803 have an integrated fully programmable data logger. The meters can be configured to various logger profiles. These profiles define the depth of loggers, the interval of the minute loggers and which registers should be included in the loggers. The logger profile is identified by the meters RR-code.

The configuration of a M-Bus module is described by the XX-YY-ZZZ code.

XX: Module type - the physical hardware

YY: System configuration – for wireless M-Bus, the radio parameters

ZZZ: Datagram – the data registers

M-Bus and wireless M-Bus modules for MULTICAL® 403, MULITCAL® 603 and MULITCAL® 803 are configurable, whereby they can be configured to send out different datagrams. A datagram is defining, which registers a specific module is configured to send out. Furthermore, transmission interval and transmission power for wireless M-Bus modules can be configured. The modules configuration is identified by the modules YY- and ZZZ-code.

This document provides an overview of both the available logger profiles for MULTICAL® 403, MULITCAL® 603 and MULITCAL® 803 and the available configurations for the wired and wireless M-Bus modules.

3 Module datagram explanation

All of our M-Bus modules wired or wireless are versatile communication modules, which can be configured to send out different datagrams. A datagram is a collection of registers a module is configured to send out. A datagram is also called a data package or a data telegram.

Not all registers are available in all meters. E.g. will cooling register E3 only be available in a meter configured as a cooling or combined heat/cooling. It will not be available in a heat meter.

For reading out Target registers, the wanted registers must be defined in the RR-configuration (logger content).

If datagrams intended for MULTICAL® 603 and 803 are used in MULTICAL® 403 some registers will not be present.

Disclaimer: All data registers in the below mentioned datagrams may not be available in the reading software.

Please contact Kamstrup A/S if any questions regarding the availability of data registers occur.

All datagrams and their content are shown in tables.

No.	Register Id	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	

The table columns are defined as:

No.: Just indicates a number of the register in the configuration.

Register ID: A numeric identifier for the register.

Register name: Is a description of the register content.

Register origin: Which source the register is read from:

- **Meter** shown as a blank field, as this is default origin.

- Module

- Year Log Yearly Target value

- Month Log Monthly Target value

- Day Log Daily Target value

St. no.: An M-Bus description to indicate Storage number.

- 0 shown as blank field, as this is actual value from meter

- 1 Logger 1

- 2 Logger 2

- n Logger n

Data type: Indicates data type:

- Int1 1 byte integer value

- Int2 2 byte integer value

- **Int4** shown as blank field, as this is mostly used.

- BCD2 2 digit BCD coded value

- BCD4 4 digit BCD coded value

- BCD6 6 digit BCD coded value

- BCD8 8 digit BCD coded value

Notes: A note indicates that some action has to be taken.

- HCC Heat/Cooling Coding

- OMS Coded according to OMS

- MSC Manufactory Specific Coding

- 402 Legacy coding for MULTICAL® 402

- FDB Fixed Data Block

H: If marked with X, the register is included in a Heat meter

C: If marked with X, the register is included in a Cooling meter

H/C: If marked with X, the register is included in a combined Heat/Cooling meter

V: If marked with X, the register is included in a Volume meter

4 Wired M-Bus datagrams

Configuration of Wired M-Bus datagrams follows this method.

This table only shows a small part of the available datagrams, just to indicate how the Datagram naming and ordering are made.

See the table of content, for all included wired datagrams, or look through the following pages.

	XX	-	YY	-	ZZZ
Module Type					
Wired M-Bus, inputs (In-A, In-B)	20				
Wired M-Bus, outputs (Out-C, Out-D)	21				
Wired M-Bus, Thermal Disconnect	22				
System Configuration					
Standard			00		
Datagrams for MULTICAL® 403,603,803					
Standard Profile Yearly Target Data					101
Standard Profile Monthly Target Data					102
					...
MULTICAL® III compatible data (6604/660S) Yearly Target Data6					999

Note: For READY compatibility, the meters unique Fabrication/Serial Number must always present as a register.

5 Wired M-Bus datagrams for MULTICAL® 403, MULTICAL® 603 and MULTICAL® 803

The following Wired M-Bus Datagrams are applicable for all wired M-Bus modules used in both MULTICAL® 403, MULTICAL® 603 and MULTICAL® 803.

The datagrams are sorted by where they are used, and then by their ZZZ code.

5.1 20-00-101: Standard profile yearly target data

Wired M-Bus datagram										MULTICAL® 403
ZZZ = 101										MULTICAL® 603
										MULTICAL® 803
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	97	Energy E8					X	X	X	
5	110	Energy E9					X	X	X	
6	68	Volume V1					X	X	X	X
7	84	Pulse input A1					X	X	X	X
8	85	Pulse input B1					X	X	X	X
9	1004	Operating hours					X	X	X	X
10	175	Error hour counter					X	X	X	X
11	86	t1 actual [2 decimals]			Int2		X	X	X	
12	87	t2 actual [2 decimals]			Int2		X	X	X	
13	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X	
14	80	Power actual					X	X	X	
15	143	Power max month					X	X	X	
16	74	Flow V1 actual					X	X	X	X
17	139	Flow V1 max month					X	X	X	X
18	369	Info bits					X	X	X	X
19	348	Date and time					X	X	X	X
20	60	Heat energy E1	Year Log	1			X		X	
21	63	Cooling energy E3	Year Log	1				X		
22	63	Cooling energy E3	Year Log	1		HCC			X	
23	97	Energy E8	Year Log	1			X	X	X	
24	110	Energy E9	Year Log	1			X	X	X	
25	68	Volume V1	Year Log	1			X	X	X	X
26	84	Pulse input A1	Year Log	1			X	X	X	X
27	85	Pulse input B1	Year Log	1			X	X	X	X
28	128	Power max year	Year Log	1			X	X	X	
29	124	Flow V1 max year	Year Log	1			X	X	X	X
30	348	Date	Year Log	1	Int2		X	X	X	X
31	404	Meter type			Int2		X	X	X	X
32	1001	Fabrication number			BCD8		X	X	X	X
33	393	Module type config No.	Module				X	X	X	X
34	346	Module SW revision	Module				X	X	X	X

Support of mWh with 4 decimals, GCal and additional info codes for MULTICAL® 603 supported from 2018-04-24.

5.2 20-00-102: Standard profile monthly target data

Wired M-Bus datagram							MULTICAL® 403 MULTICAL® 603 MULTICAL® 803			
							ZZZ = 102			
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	97	Energy E8					X	X	X	
5	110	Energy E9					X	X	X	
6	68	Volume V1					X	X	X	X
7	84	Pulse input A1					X	X	X	X
8	85	Pulse input B1					X	X	X	X
9	1004	Operating hours					X	X	X	X
10	175	Error hour counter					X	X	X	X
11	86	t1 actual [2 decimals]			Int2		X	X	X	
12	87	t2 actual [2 decimals]			Int2		X	X	X	
13	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X	
14	80	Power actual					X	X	X	
15	143	Power max month					X	X	X	
16	74	Flow V1 actual					X	X	X	X
17	139	Flow V1 max month					X	X	X	X
18	369	Info bits					X	X	X	X
19	348	Date and time					X	X	X	X
20	60	Heat energy E1	Month Log	1			X		X	
21	63	Cooling energy E3	Month Log	1				X		
22	63	Cooling energy E3	Month Log	1		HCC			X	
23	97	Energy E8	Month Log	1			X	X	X	
24	110	Energy E9	Month Log	1			X	X	X	
25	68	Volume V1	Month Log	1			X	X	X	X
26	84	Pulse input A1	Month Log	1			X	X	X	X
27	85	Pulse input B1	Month Log	1			X	X	X	X
28	143	Power max month	Month Log	1			X	X	X	
29	139	Flow V1 max month	Month Log	1			X	X	X	X
30	348	Date	Month Log	1	Int2		X	X	X	X
31	404	Meter type			Int2		X	X	X	X
32	1001	Fabrication number			BCD8		X	X	X	X
33	393	Module type config No.	Module				X	X	X	X
34	346	Module SW revision	Module				X	X	X	X

Support of mWh with 4 decimals, GCal and additional info codes for MULTICAL® 603 supported from 2018-04-24.

5.3 20-00-103: Tariff profile yearly target data

Wired M-Bus datagram							MULTICAL® 403 MULTICAL® 603 MULTICAL® 803			
							ZZZ = 103			
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	68	Volume V1					X	X	X	X
5	84	Pulse input A1					X	X	X	X
6	85	Pulse input B1					X	X	X	X
7	64	Tariff TA2					X	X	X	
8	65	Tariff TA3					X	X	X	
9	362	Tariff TA4					X	X	X	
10	1004	Operating hours					X	X	X	X
11	175	Error hour counter					X	X	X	X
12	86	t1 actual [2 decimals]			Int2		X	X	X	
13	87	t2 actual [2 decimals]			Int2		X	X	X	
14	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X	
15	80	Power actual					X	X	X	
16	143	Power max month					X	X	X	
17	74	Flow V1 actual					X	X	X	X
18	139	Flow V1 max month					X	X	X	X
19	369	Info bits					X	X	X	X
20	348	Date and time					X	X	X	X
21	60	Heat energy E1	Year Log	1			X		X	
22	63	Cooling energy E3	Year Log	1				X		
23	63	Cooling energy E3	Year Log	1		HCC			X	
24	68	Volume V1	Year Log	1			X	X	X	X
25	84	Pulse input A1	Year Log	1			X	X	X	X
26	85	Pulse input B1	Year Log	1			X	X	X	X
27	64	Tariff TA2	Year Log	1			X	X	X	
28	65	Tariff TA3	Year Log	1			X	X	X	
29	362	Tariff TA4	Year Log	1			X	X	X	
30	128	Power max year	Year Log	1			X	X	X	
31	124	Flow V1 max year	Year Log	1			X	X	X	X
32	348	Date	Year Log	1	Int2		X	X	X	X
33	404	Meter type			Int2		X	X	X	X
34	1001	Fabrication number			BCD8		X	X	X	X
35	393	Module type config No.	Module				X	X	X	X
36	346	Module SW revision	Module				X	X	X	X

Support of mWh with 4 decimals, GCal and additional info codes for MULTICAL® 603 supported from 2018-04-24.

5.4 20-00-104: Tariff profile monthly target data

Wired M-Bus datagram							MULTICAL® 403 MULTICAL® 603 MULTICAL® 803			
							ZZZ = 104			
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	68	Volume V1					X	X	X	X
5	84	Pulse input A1					X	X	X	X
6	85	Pulse input B1					X	X	X	X
7	64	Tariff TA2					X	X	X	
8	65	Tariff TA3					X	X	X	
9	362	Tariff TA4					X	X	X	
10	1004	Operating hours					X	X	X	X
11	175	Error hour counter					X	X	X	X
12	86	t1 actual [2 decimals]			Int2		X	X	X	
13	87	t2 actual [2 decimals]			Int2		X	X	X	
14	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X	
15	80	Power actual					X	X	X	
16	143	Power max month					X	X	X	
17	74	Flow V1 actual					X	X	X	X
18	139	Flow V1 max month					X	X	X	X
19	369	Info bits					X	X	X	X
20	348	Date and time					X	X	X	X
21	60	Heat energy E1	Month Log	1			X		X	
22	63	Cooling energy E3	Month Log	1				X		
23	63	Cooling energy E3	Month Log	1		HCC			X	
24	68	Volume V1	Month Log	1			X	X	X	X
25	84	Pulse input A1	Month Log	1			X	X	X	X
26	85	Pulse input B1	Month Log	1			X	X	X	X
27	64	Tariff TA2	Month Log	1			X	X	X	
28	65	Tariff TA3	Month Log	1			X	X	X	
29	362	Tariff TA4	Month Log	1			X	X	X	
30	143	Power max month	Month Log	1			X	X	X	
31	139	Flow V1 max month	Month Log	1			X	X	X	X
32	348	Date	Month Log	1	Int2		X	X	X	X
33	404	Meter type			Int2		X	X	X	X
34	1001	Fabrication number			BCD8		X	X	X	X
35	393	Module type config No.	Module				X	X	X	X
36	346	Module SW revision	Module				X	X	X	X

Support of mWh with 4 decimals, GCal and additional info codes for MULTICAL® 603 supported from 2018-04-24.

5.5 20-00-105: DACH profile yearly target data

Wired M-Bus datagram							ZZZ = 105				MULTICAL® 403
											MULTICAL® 603
											MULTICAL® 803
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V	
1	60	Heat energy E1					X		X		
2	63	Cooling energy E3						X			
3	63	Cooling energy E3				HCC			X		
4	364	Heat energy A1					X	X	X		
5	365	Heat energy A2					X	X	X		
6	68	Volume V1					X	X	X	X	
7	84	Pulse input A1					X	X	X	X	
8	85	Pulse input B1					X	X	X	X	
9	64	Tariff TA2					X	X	X		
10	65	Tariff TA3					X	X	X		
11	362	Tariff TA4					X	X	X		
12	86	t1 actual [2 decimals]			Int2		X	X	X		
13	87	t2 actual [2 decimals]			Int2		X	X	X		
14	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X		
15	366	t5 limit			Int2		X	X	X		
16	80	Power actual					X	X	X		
17	143	Power max month					X	X	X		
18	74	Flow V1 actual					X	X	X	X	
19	139	Flow V1 max month					X	X	X	X	
20	369	Info bits					X	X	X	X	
21	348	Date and time					X	X	X	X	
22	60	Heat energy E1	Year Log	1			X		X		
23	63	Cooling energy E3	Year Log	1				X			
24	63	Cooling energy E3	Year Log	1		HCC			X		
25	84	Pulse input A1	Year Log	1			X	X	X	X	
26	85	Pulse input B1	Year Log	1			X	X	X	X	
27	364	Heat energy A1	Year Log	1			X	X	X		
28	365	Heat energy A2	Year Log	1			X	X	X		
29	64	Tariff TA2	Year Log	1			X	X	X		
30	65	Tariff TA3	Year Log	1			X	X	X		
31	362	Tariff TA4	Year Log	1			X	X	X		
32	128	Power max year	Year Log	1			X	X	X		
33	348	Date	Year Log	1	Int2		X	X	X	X	
34	404	Meter type			Int2		X	X	X	X	
35	1001	Fabrication number			BCD8		X	X	X	X	
36	393	Module type config No.	Module				X	X	X	X	
37	346	Module SW revision	Module				X	X	X	X	

Support of mWh with 4 decimals, GCal and additional info codes for MULTICAL® 603 supported from 2018-04-24.

5.6 20-00-106: DACH profile monthly target data

Wired M-Bus datagram							MULTICAL® 403 MULTICAL® 603 MULTICAL® 803			
							ZZZ = 106			
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	364	Heat energy A1					X	X	X	
5	365	Heat energy A2					X	X	X	
6	68	Volume V1					X	X	X	X
7	84	Pulse input A1					X	X	X	X
8	85	Pulse input B1					X	X	X	X
9	64	Tariff TA2					X	X	X	
10	65	Tariff TA3					X	X	X	
11	362	Tariff TA4					X	X	X	
12	86	t1 actual [2 decimals]			Int2		X	X	X	
13	87	t2 actual [2 decimals]			Int2		X	X	X	
14	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X	
15	366	t5 limit			Int2		X	X	X	
16	80	Power actual					X	X	X	
17	143	Power max month					X	X	X	
18	74	Flow V1 actual					X	X	X	X
19	139	Flow V1 max month					X	X	X	X
20	369	Info bits					X	X	X	X
21	348	Date and time					X	X	X	X
22	60	Heat energy E1	Month Log	1			X		X	
23	63	Cooling energy E3	Month Log	1				X		
24	63	Cooling energy E3	Month Log	1		HCC			X	
25	84	Pulse input A1	Month Log	1			X	X	X	X
26	85	Pulse input B1	Month Log	1			X	X	X	X
27	364	Heat energy A1	Month Log	1			X	X	X	
28	365	Heat energy A2	Month Log	1			X	X	X	
29	64	Tariff TA2	Month Log	1			X	X	X	
30	65	Tariff TA3	Month Log	1			X	X	X	
31	362	Tariff TA4	Month Log	1			X	X	X	
32	143	Power max month	Month Log	1			X	X	X	
33	348	Date	Month Log	1	Int2		X	X	X	X
34	404	Meter type			Int2		X	X	X	X
35	1001	Fabrication number			BCD8		X	X	X	X
36	393	Module type config No.	Module				X	X	X	X
37	346	Module SW revision	Module				X	X	X	X

Support of mWh with 4 decimals, GCal and additional info codes for MULTICAL® 603 supported from 2018-04-24.

5.7 20-00-107: Control profile

Wired M-Bus datagram							MULTICAL® 403 MULTICAL® 603 MULTICAL® 803			
							ZZZ = 107			
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	68	Volume V1					X	X	X	X
5	86	t1 actual [2 decimals]			Int2		X	X	X	
6	87	t2 actual [2 decimals]			Int2		X	X	X	
7	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X	
8	80	Power actual					X	X	X	
9	74	Flow V1 actual					X	X	X	X
10	369	Info bits					X	X	X	X
11	404	Meter type			Int2		X	X	X	X
12	1001	Fabrication number			BCD8		X	X	X	X
13	393	Module type config No.	Module				X	X	X	X
14	346	Module SW revision	Module				X	X	X	X

Support of mWh with 4 decimals, GCal and additional info codes for MULTICAL® 603 supported from 2018-04-24.

5.8 20-00-108: Coefficient of performance profile yearly target data

Wired M-Bus datagram							MULTICAL® 403 MULTICAL® 603 MULTICAL® 803			
							ZZZ = 108			
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	68	Volume V1					X	X	X	X
5	84	Pulse input A1					X	X	X	X
6	85	Pulse input B1					X	X	X	X
7	1004	Operating hours					X	X	X	X
8	86	t1 actual [2 decimals]			Int2		X	X	X	
9	87	t2 actual [2 decimals]			Int2		X	X	X	
10	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X	
11	80	Power actual					X	X	X	
12	143	Power max month					X	X	X	
13	74	Flow V1 actual					X	X	X	X
14	139	Flow V1 max month					X	X	X	X
15	372	Power Input B1					X	X	X	
16	371	COP			Int2		X	X	X	
17	369	Info bits					X	X	X	X
18	60	Heat energy E1	Year Log	1			X		X	
19	63	Cooling energy E3	Year Log	1				X		
20	63	Cooling energy E3	Year Log	1		HCC			X	
21	68	Volume V1	Year Log	1			X	X	X	X
22	84	Pulse input A1	Year Log	1			X	X	X	X
23	85	Pulse input B1	Year Log	1			X	X	X	X
24	128	Power max year	Year Log	1			X	X	X	
25	124	Flow V1 max year	Year Log	1			X	X	X	X
26	355	COP year	Year Log	1	Int2		X	X	X	X
27	348	Date	Year Log	1	Int2		X	X	X	X
28	404	Meter type			Int2		X	X	X	X
29	1001	Fabrication number			BCD8		X	X	X	X
30	393	Module type config No.	Module				X	X	X	X
31	346	Module SW revision	Module				X	X	X	X

Special datagram for heat pump installation.

Support of mWh with 4 decimals, GCal and additional info codes for MULTICAL® 603 supported from 2018-04-24.

5.9 20-00-109: SE profile monthly target data for meter-log profile 11

Wired M-Bus datagram							MULTICAL® 403 MULTICAL® 603 MULTICAL® 803			
							ZZZ = 109			
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	97	Energy E8					X	X	X	
5	110	Energy E9					X	X	X	
6	68	Volume V1					X	X	X	X
7	84	Pulse input A1					X	X	X	X
8	85	Pulse input B1					X	X	X	X
9	1004	Operating hours					X	X	X	X
10	175	Error hour counter					X	X	X	X
11	86	t1 actual [2 decimals]			Int2		X	X	X	
12	87	t2 actual [2 decimals]			Int2		X	X	X	
13	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X	
14	80	Power actual					X	X	X	
15	143	Power max month					X	X	X	
16	74	Flow V1 actual					X	X	X	X
17	139	Flow V1 max month					X	X	X	X
18	369	Info bits					X	X	X	X
19	348	Date and time					X	X	X	X
20	60	Heat energy E1	Month Log	1			X		X	
21	63	Cooling energy E3	Month Log	1				X		
22	63	Cooling energy E3	Month Log	1		HCC			X	
23	97	Energy E8	Month Log	1			X	X	X	
24	110	Energy E9	Month Log	1			X	X	X	
25	68	Volume V1	Month Log	1			X	X	X	X
26	84	Pulse input A1	Month Log	1			X	X	X	X
27	85	Pulse input B1	Month Log	1			X	X	X	X
28	143	Power max month	Month Log	1			X	X	X	
29	139	Flow V1 max month	Month Log	1			X	X	X	X
30	348	Date	Month Log	1	Int2		X	X	X	X
31	404	Meter type			Int2		X	X	X	X
32	1001	Fabrication number			BCD8		X	X	X	X
33	393	Module type config No.	Module				X	X	X	X
34	346	Module SW revision	Module				X	X	X	X

5.10 20-00-989: L+G UH50 fast mode

Wired M-Bus datagram							ZZZ = 989				MULTICAL® 403
											MULTICAL® 603
											MULTICAL® 803
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V	
1	0	L+G_UH50_UpdatingTimeInSeconds_DUMMY			--		X	X			
2	0	L+G_UH50_AveragingTimeInSeconds_DUMMY			--		X	X			
3	60	Heat energy E1			BCD8		X				
4	63	Cooling energy E3			BCD8			X			
5	68	Volume V1			BCD8		X	X			
6	80	Power actual			BCD6		X	X			
7	74	Flow V1 actual			BCD6		X	X			
8	398	t1 actual (1 decimal)			BCD4		X	X			
9	399	t2 actual (1 decimal)			BCD4		X	X			

Emulates L+G UH 50 Fast Read-out mode for 3rd party equipment.

Configuration does not support GCal.

Not supported in Kamstrup reading systems.

5.11 20-00-998: MULTICAL® 402/602 profile

Wired M-Bus datagram							MULTICAL® 403 MULTICAL® 603 MULTICAL® 803			
							ZZZ = 998			
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	1001	Fabrication number			BCD8		X	X	X	X
2	60	Heat energy E1					X	X	X	X
3	68	Volume V1					X	X	X	X
4	1004	Operating hours					X	X	X	X
5	86	t1 actual [2 decimals]					X	X	X	X
6	87	t2 actual [2 decimals]					X	X	X	X
7	89	t1-t2 diff. temp. [2 decimals]					X	X	X	X
8	80	Power actual					X	X	X	X
9	128	Power max year					X	X	X	X
10	74	Flow V1 actual					X	X	X	X
11	124	Flow V1 max year					X	X	X	X
12	64	Tariff TA2					X	X	X	X
13	65	Tariff TA3					X	X	X	X
14	84	Pulse input A1					X	X	X	X
15	85	Pulse input B1					X	X	X	X
16	63	Cooling energy E3				402	X	X	X	X
17	348	Date and time					X	X	X	X
18	60	Heat energy E1	Year Log	1			X	X	X	X
19	68	Volume V1	Year Log	1			X	X	X	X
20	128	Power max year	Year Log	1			X	X	X	X
21	124	Flow V1 max year	Year Log	1			X	X	X	X
22	64	Tariff TA2	Year Log	1			X	X	X	X
23	65	Tariff TA3	Year Log	1			X	X	X	X
24	84	Pulse input A1	Year Log	1			X	X	X	X
25	85	Pulse input B1	Year Log	1			X	X	X	X
26	63	Cooling energy E3	Year Log	1		402	X	X	X	X
27	348	Date	Year Log	1	Int2		X	X	X	X

Similar to M-Bus modules 402020/670020/6707.

Not to be used where display is in mWh or GJ and has 0 or 1 decimal resolution.

Configuration does not support GCal.

Legacy module to be used in old Kamstrup systems or in 3rd party systems.

Up front test strongly recommended!

5.12 20-00-999: MULTICAL® III profile

Wired M-Bus datagram	ZZZ = 999	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1			BCD8		X			
2	63	Cooling energy E3			BCD8			X		
3	68	Volume V1			BCD8		X	X		
4	1004	Operating hours			BCD8		X	X		
5	86	t1 actual [2 decimals]			BCD8		X	X		
6	87	t2 actual [2 decimals]			BCD8		X	X		
7	89	t1-t2 diff. temp. [2 decimals]			BCD8		X	X		
8	80	Power actual			BCD8		X	X		
9	74	Flow V1 actual			BCD8		X	X		
10	60	Heat energy E1	Year Log	1	BCD8		X			
11	63	Cooling energy E3	Year Log	1	BCD8			X		
12	68	Volume V1	Year Log	1	BCD8		X	X		
13	348	Date	Year Log	1	Int2		X	X		

Legacy module to be used in old Kamstrup systems or in 3rd party systems.

Configuration does not support GCal or mWh with 4 decimals.

Up front test strongly recommended!

6 Wired M-Bus datagrams for MULTICAL® 603 and MULTICAL® 803

The following Wired M-Bus Datagrams are applicable for all wired M-Bus modules used in MULTICAL® 603 and MULTICAL® 803. The datagrams are sorted by their ZZZ code. If datagrams intended for MULTICAL® 603 and MULTICAL® 803 are used in MULTICAL® 403 some registers will not be present.

6.1 20-00-301: Extended pulse input profile yearly target data

Wired M-Bus datagram		ZZZ = 301				MULTICAL® 603 MULTICAL® 803				
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	68	Volume V1					X	X	X	X
5	84	Pulse input A1					X	X	X	X
6	85	Pulse input B1					X	X	X	X
7	224	Pulse input A2					X	X	X	X
8	225	Pulse input B2					X	X	X	X
9	1004	Operating hours					X	X	X	X
10	175	Error hour counter					X	X	X	X
11	86	t1 actual [2 decimals]			Int2		X	X	X	
12	87	t2 actual [2 decimals]			Int2		X	X	X	
13	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X	
14	80	Power actual					X	X	X	
15	143	Power max month					X	X	X	
16	389	Power max month date			Int2		X	X	X	
17	74	Flow V1 actual					X	X	X	X
18	139	Flow V1 max month					X	X	X	X
19	387	Flow V1 max month date			Int2		X	X	X	X
20	369	Info bits					X	X	X	X
21	348	Date and time					X	X	X	X
22	60	Heat energy E1	Year Log	1			X		X	
23	63	Cooling energy E3	Year Log	1				X		
24	63	Cooling energy E3	Year Log	1		HCC			X	
25	68	Volume V1	Year Log	1			X	X	X	X
26	84	Pulse input A1	Year Log	1			X	X	X	X
27	85	Pulse input B1	Year Log	1			X	X	X	X
28	224	Pulse input A2	Year Log	1			X	X	X	X
29	225	Pulse input B2	Year Log	1			X	X	X	X
30	128	Power max year	Year Log	1			X	X	X	
31	385	Power max year date	Year Log	1	Int2		X	X	X	
32	124	Flow V1 max year	Year Log	1			X	X	X	X
33	383	Flow V1 max year date	Year Log	1	Int2		X	X	X	X
34	348	Date	Year Log	1	Int2		X	X	X	X
35	404	Meter type			Int2		X	X	X	X
36	1001	Fabrication number			BCD8		X	X	X	X
37	393	Module type config No.	Module				X	X	X	X
38	346	Module SW revision	Module				X	X	X	X

6.2 20-00-302: Extended pulse input profile monthly target data

Wired M-Bus datagram							ZZZ = 302				MULTICAL® 603
											MULTICAL® 803
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V	
1	60	Heat energy E1					X		X		
2	63	Cooling energy E3						X			
3	63	Cooling energy E3				HCC			X		
4	68	Volume V1					X	X	X	X	
5	84	Pulse input A1					X	X	X	X	
6	85	Pulse input B1					X	X	X	X	
7	224	Pulse input A2					X	X	X	X	
8	225	Pulse input B2					X	X	X	X	
9	1004	Operating hours					X	X	X	X	
10	175	Error hour counter					X	X	X	X	
11	86	t1 actual [2 decimals]			Int2		X	X	X		
12	87	t2 actual [2 decimals]			Int2		X	X	X		
13	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X		
14	80	Power actual					X	X	X		
15	143	Power max month					X	X	X		
16	389	Power max month date			Int2		X	X	X		
17	74	Flow V1 actual					X	X	X	X	
18	139	Flow V1 max month					X	X	X	X	
19	387	Flow V1 max month date			Int2		X	X	X	X	
20	369	Info bits					X	X	X	X	
21	348	Date and time					X	X	X	X	
22	60	Heat energy E1	Month Log	1			X		X		
23	63	Cooling energy E3	Month Log	1				X			
24	63	Cooling energy E3	Month Log	1		HCC			X		
25	68	Volume V1	Month Log	1			X	X	X	X	
26	84	Pulse input A1	Month Log	1			X	X	X	X	
27	85	Pulse input B1	Month Log	1			X	X	X	X	
28	224	Pulse input A2	Month Log	1			X	X	X	X	
29	225	Pulse input B2	Month Log	1			X	X	X	X	
30	143	Power max month	Month Log	1			X	X	X		
31	389	Power max month date	Month Log	1	Int2		X	X	X		
32	139	Flow V1 max month	Month Log	1			X	X	X	X	
33	387	Flow V1 max month date	Month Log	1	Int2		X	X	X	X	
34	348	Date	Month Log	1	Int2		X	X	X	X	
35	404	Meter type			Int2		X	X	X	X	
36	1001	Fabrication number			BCD8		X	X	X	X	
37	393	Module type config No.	Module				X	X	X	X	
38	346	Module SW revision	Module				X	X	X	X	

6.3 20-00-303: Dual ULTRAFLOW® profile yearly target data

Wired M-Bus datagram							ZZZ = 303				MULTICAL® 603
											MULTICAL® 803
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V	
1	60	Heat energy E1					X		X		
2	63	Cooling energy E3						X			
3	63	Cooling energy E3				HCC			X		
4	68	Volume V1					X	X	X	X	
5	69	Volume V2					X	X	X	X	
6	84	Pulse input A1					X	X	X	X	
7	85	Pulse input B1					X	X	X	X	
8	1004	Operating hours					X	X	X	X	
9	175	Error hour counter					X	X	X	X	
10	86	t1 actual [2 decimals]			Int2		X	X	X		
11	87	t2 actual [2 decimals]			Int2		X	X	X		
12	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X		
13	88	t3 actual [2 decimals]			Int2		X	X	X		
14	80	Power actual					X	X	X		
15	143	Power max month					X	X	X		
16	389	Power max month date			Int2		X	X	X		
17	74	Flow V1 actual					X	X	X	X	
18	139	Flow V1 max month					X	X	X	X	
19	387	Flow V1 max month date			Int2		X	X	X	X	
20	75	Flow V2 actual					X	X	X	X	
21	369	Info bits					X	X	X	X	
22	348	Date and time					X	X	X	X	
23	60	Heat energy E1	Year Log	1			X		X		
24	63	Cooling energy E3	Year Log	1				X			
25	63	Cooling energy E3	Year Log	1		HCC			X		
26	68	Volume V1	Year Log	1			X	X	X	X	
27	69	Volume V2	Year Log	1			X	X	X	X	
28	84	Pulse input A1	Year Log	1			X	X	X	X	
29	85	Pulse input B1	Year Log	1			X	X	X	X	
30	128	Power max year	Year Log	1			X	X	X		
31	385	Power max year date	Year Log	1	Int2		X	X	X		
32	124	Flow V1 max year	Year Log	1			X	X	X	X	
33	383	Flow V1 max year date	Year Log	1	Int2		X	X	X	X	
34	348	Date	Year Log	1	Int2		X	X	X	X	
35	404	Meter type			Int2		X	X	X	X	
36	1001	Fabrication number			BCD8		X	X	X	X	
37	393	Module type config No.	Module				X	X	X	X	
38	346	Module SW revision	Module				X	X	X	X	

6.4 20-00-304: Dual ULTRAFLOW® profile monthly target data

Wired M-Bus datagram							ZZZ = 304				MULTICAL® 603
											MULTICAL® 803
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V	
1	60	Heat energy E1					X		X		
2	63	Cooling energy E3						X			
3	63	Cooling energy E3				HCC			X		
4	68	Volume V1					X	X	X	X	
5	69	Volume V2					X	X	X	X	
6	84	Pulse input A1					X	X	X	X	
7	85	Pulse input B1					X	X	X	X	
8	1004	Operating hours					X	X	X	X	
9	175	Error hour counter					X	X	X	X	
10	86	t1 actual [2 decimals]			Int2		X	X	X		
11	87	t2 actual [2 decimals]			Int2		X	X	X		
12	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X		
13	88	t3 actual [2 decimals]			Int2		X	X	X		
14	80	Power actual					X	X	X		
15	143	Power max month					X	X	X		
16	389	Power max month date			Int2		X	X	X		
17	74	Flow V1 actual					X	X	X	X	
18	139	Flow V1 max month					X	X	X	X	
19	387	Flow V1 max month date			Int2		X	X	X	X	
20	75	Flow V2 actual					X	X	X	X	
21	369	Info bits					X	X	X	X	
22	348	Date and time					X	X	X	X	
23	60	Heat energy E1	Month Log	1			X		X		
24	63	Cooling energy E3	Month Log	1				X			
25	63	Cooling energy E3	Month Log	1		HCC			X		
26	68	Volume V1	Month Log	1			X	X	X	X	
27	69	Volume V2	Month Log	1			X	X	X	X	
28	84	Pulse input A1	Month Log	1			X	X	X	X	
29	85	Pulse input B1	Month Log	1			X	X	X	X	
30	143	Power max month	Month Log	1			X	X	X		
31	389	Power max month date	Month Log	1	Int2		X	X	X		
32	139	Flow V1 max month	Month Log	1			X	X	X	X	
33	387	Flow V1 max month date	Month Log	1	Int2		X	X	X	X	
34	348	Date	Month Log	1	Int2		X	X	X	X	
35	404	Meter type			Int2		X	X	X	X	
36	1001	Fabrication number			BCD8		X	X	X	X	
37	393	Module type config No.	Module				X	X	X	X	
38	346	Module SW revision	Module				X	X	X	X	

6.5 20-00-305: Alternative profile yearly target data

Wired M-Bus datagram							ZZZ = 305				MULTICAL® 603	MULTICAL® 803
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V		
1	60	Heat energy E1					X		X			
2	63	Cooling energy E3						X				
3	63	Cooling energy E3				HCC			X			
4	61	Inlet energy E4					X	X	X			
5	62	Outlet energy E5					X	X	X			
6	95	Tap water energy E6					X	X	X			
7	68	Volume V1					X	X	X	X		
8	69	Volume V2					X	X	X	X		
9	84	Pulse input A1					X	X	X	X		
10	85	Pulse input B1					X	X	X	X		
11	72	Mass M1					X	X	X	X		
12	73	Mass M2					X	X	X	X		
13	1004	Operating hours					X	X	X	X		
14	86	t1 actual [2 decimals]			Int2		X	X	X			
15	87	t2 actual [2 decimals]			Int2		X	X	X			
16	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X			
17	88	t3 actual [2 decimals]			Int2		X	X	X			
18	122	t4 actual [2 decimals]			Int2		X	X	X			
19	80	Power actual					X	X	X			
20	74	Flow V1 actual					X	X	X	X		
21	75	Flow V2 actual					X	X	X	X		
22	139	Flow V1 max month					X	X	X	X		
23	387	Flow V1 max month date			Int2		X	X	X	X		
24	369	Info bits					X	X	X	X		
25	348	Date and time					X	X	X	X		
26	60	Heat energy E1	Year Log	1			X		X			
27	63	Cooling energy E3	Year Log	1				X				
28	63	Cooling energy E3	Year Log	1		HCC			X			
29	95	Tap water energy E6	Year Log	1			X	X	X			
30	68	Volume V1	Year Log	1			X	X	X	X		
31	69	Volume V2	Year Log	1			X	X	X	X		
32	84	Pulse input A1	Year Log	1			X	X	X	X		
33	85	Pulse input B1	Year Log	1			X	X	X	X		
34	124	Flow V1 max year	Year Log	1			X	X	X	X		
35	348	Date	Year Log	1	Int2		X	X	X	X		
36	404	Meter type			Int2		X	X	X	X		
37	1001	Fabrication number			BCD8		X	X	X	X		

6.6 20-00-306: Alternative profile monthly target data

Wired M-Bus datagram							ZZZ = 306				MULTICAL® 603
											MULTICAL® 803
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V	
1	60	Heat energy E1					X		X		
2	63	Cooling energy E3						X			
3	63	Cooling energy E3				HCC			X		
4	61	Inlet energy E4					X	X	X		
5	62	Outlet energy E5					X	X	X		
6	95	Tap water energy E6					X	X	X		
7	68	Volume V1					X	X	X	X	
8	69	Volume V2					X	X	X	X	
9	84	Pulse input A1					X	X	X	X	
10	85	Pulse input B1					X	X	X	X	
11	72	Mass M1					X	X	X	X	
12	73	Mass M2					X	X	X	X	
13	1004	Operating hours					X	X	X	X	
14	86	t1 actual [2 decimals]			Int2		X	X	X		
15	87	t2 actual [2 decimals]			Int2		X	X	X		
16	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X		
17	88	t3 actual [2 decimals]			Int2		X	X	X		
18	122	t4 actual [2 decimals]			Int2		X	X	X		
19	80	Power actual					X	X	X		
20	74	Flow V1 actual					X	X	X	X	
21	75	Flow V2 actual					X	X	X	X	
22	139	Flow V1 max month					X	X	X	X	
23	387	Flow V1 max month date			Int2		X	X	X	X	
24	369	Info bits					X	X	X	X	
25	348	Date and time					X	X	X	X	
26	60	Heat energy E1	Month Log	1			X		X		
27	63	Cooling energy E3	Month Log	1				X			
28	63	Cooling energy E3	Month Log	1		HCC			X		
29	95	Tap water energy E6	Month Log	1			X	X	X		
30	68	Volume V1	Month Log	1			X	X	X	X	
31	69	Volume V2	Month Log	1			X	X	X	X	
32	84	Pulse input A1	Month Log	1			X	X	X	X	
33	85	Pulse input B1	Month Log	1			X	X	X	X	
34	139	Flow V1 max month	Month Log	1			X	X	X	X	
35	348	Date	Month Log	1	Int2		X	X	X	X	
36	404	Meter type			Int2		X	X	X	X	
37	1001	Fabrication number			BCD8		X	X	X	X	

6.7 20-00-307: PDO profile monthly target data

Wired M-Bus datagram							ZZZ = 307				MULTICAL® 603
											MULTICAL® 803
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V	
1	60	Heat energy E1					X		X		
2	63	Cooling energy E3						X			
3	97	Energy E8					X	X	X		
4	110	Energy E9					X	X	X		
5	68	Volume V1					X	X	X		
6	69	Volume V2					X	X	X		
7	72	Mass M1					X	X	X		
8	73	Mass M2					X	X	X		
9	84	Pulse input A1					X	X	X		
10	85	Pulse input B1					X	X	X		
11	1004	Operating hours					X	X	X		
12	175	Error hour counter					X	X	X		
13	86	t1 actual [2 decimals]			Int2		X	X	X		
14	87	t2 actual [2 decimals]			Int2		X	X	X		
15	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X		
16	88	t3 actual [2 decimals]			Int2		X	X	X		
17	80	Power actual					X	X	X		
18	74	Flow V1 actual					X	X	X		
19	369	Info bits					X	X	X		
20	348	Date and time					X	X	X		
21	60	Heat energy E1	Month Log	1			X		X		
22	63	Cooling energy E3	Month Log	1				X			
23	97	Energy E8	Month Log	1			X	X	X		
24	110	Energy E9	Month Log	1			X	X	X		
25	68	Volume V1	Month Log	1			X	X	X		
26	69	Volume V2	Month Log	1			X	X	X		
27	72	Mass M1	Month Log	1			X	X	X		
28	73	Mass M2	Month Log	1			X	X	X		
29	84	Pulse input A1	Month Log	1			X	X	X		
30	85	Pulse input B1	Month Log	1			X	X	X		
31	143	Power max month	Month Log	1			X	X	X		
32	389	Power max month date	Month Log	1	Int2		X	X	X		
33	139	Flow V1 max month	Month Log	1			X	X	X		
34	387	Flow V1 max month date	Month Log	1	Int2		X	X	X		
35	348	Date	Month Log	1	Int2		X	X	X		
36	404	Meter type			Int2		X	X	X		
37	1001	Fabrication number			BCD8		X	X	X		
38	393	Module type config No.	Module				X	X	X		
39	346	Module SW revision	Module				X	X	X		

Dedicated datagram for PDO installations.

PDO = Permanent Drift Overvågning (Permanent Operation Monitoring).

6.8 20-00-308: Analog input profile

Wired M-Bus datagram		ZZZ = 308		MULTICAL® 603 MULTICAL® 803						
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	68	Volume V1					X	X	X	X
5	86	t1 actual [2 decimals]			Int2		X	X	X	
6	87	t2 actual [2 decimals]			Int2		X	X	X	
7	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X	
8	80	Power actual					X	X	X	
9	74	Flow V1 actual					X	X	X	X
10	91	P1 actual - part 1					X	X	X	X
11	92	P2 actual - part 1					X	X	X	X
12	369	Info bits					X	X	X	X
13	404	Meter type			Int2		X	X	X	X
14	1001	Fabrication number			BCD8		X	X	X	X
15	393	Module type config No.	Module				X	X	X	X
16	346	Module SW revision	Module				X	X	X	X

NB! This configuration is replaced by YY-ZZZ = 00-320.

Dedicated datagram for Analog Inputs module HC-003-41.

The units of the registers P1 actual and P2 actual depends on the module configuration.

6.9 20-00-309: Heat energy with circulation

Wired M-Bus datagram		ZZZ = 309					MULTICAL® 603 MULTICAL® 803			
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	94	Heat energy E2					X	X	X	
3	63	Cooling energy E3				HCC			X	
4	61	Inlet energy E4					X	X	X	
5	62	Outlet energy E5					X	X	X	
6	96	Tap water energy E7					X	X	X	
7	178	Differential energy dE					X	X	X	X
8	68	Volume V1					X	X	X	X
9	69	Volume V2					X	X	X	X
10	1004	Operating hours					X	X	X	X
11	86	t1 actual [2 decimals]			Int2		X	X	X	
12	87	t2 actual [2 decimals]			Int2		X	X	X	
13	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X	
14	88	t3 actual [2 decimals]			Int2		X	X	X	
15	74	Flow V1 actual					X	X	X	X
16	75	Flow V2 actual					X	X	X	X
17	80	Power actual					X	X	X	
18	369	Info bits					X	X	X	X
19	347	Customer Number			BCD8		X	X	X	X
20	1001	Fabrication number			BCD8		X	X	X	X
21	404	Meter type			Int2		X	X	X	X
22	393	Module type config No.	Module				X	X	X	X
23	346	Module SW revision	Module				X	X	X	X

Dedicated datagram for MULTICAL® 603 and MULTICAL® 803 meter applications 7 and 8.

Application 7: Opens system with 2 flow sensors, utilizing differential energy dE and E2,E4 and E5.

Application 8: Hot-water boiler with circulation, utilizing E4 and E7.

6.10 20-00-310: Energy profile SNG

Wired M-Bus datagram		ZZZ = 310		MULTICAL® 603 MULTICAL® 803						
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	61	Inlet energy E4					X	X	X	
5	62	Outlet energy E5					X	X	X	
6	95	Tap water energy E6					X	X	X	
7	96	Tap water energy E7					X	X	X	
8	68	Volume V1					X	X	X	X
9	69	Volume V2					X	X	X	X
10	84	Pulse input A1					X	X	X	X
11	85	Pulse input B1					X	X	X	X
12	224	Pulse input A2					X	X	X	X
13	225	Pulse input B2					X	X	X	X
14	91	P1 actual - part 1					X	X	X	X
15	92	P2 actual - part 1					X	X	X	X
16	72	Mass M1					X	X	X	X
17	73	Mass M2					X	X	X	X
18	1004	Operating hours					X	X	X	X
19	369	Info bits					X	X	X	X
20	348	Date and time					X	X	X	X
21	86	t1 actual [2 decimals]			Int2		X	X	X	
22	87	t2 actual [2 decimals]			Int2		X	X	X	
23	88	t3 actual [2 decimals]			Int2		X	X	X	
24	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X	
25	74	Flow V1 actual					X	X	X	X
26	75	Flow V2 actual					X	X	X	X
27	80	Power actual					X	X	X	
28	64	Tariff TA2					X	X	X	
29	65	Tariff TA3					X	X	X	
30	404	Meter type			Int2		X	X	X	X
31	1001	Fabrication number			BCD8		X	X	X	X
32	393	Module type config No.	Module				X	X	X	X
33	346	Module SW revision	Module				X	X	X	X

6.11 20-00-311: Mixed fluid. monthly target data

Wired M-Bus datagram							ZZZ = 311				MULTICAL® 603
											MULTICAL® 803
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V	
1	60	Heat energy E1					X		X		
2	63	Cooling energy E3						X			
3	63	Cooling energy E3 extra digit				OMS			X		
4	68	Volume V1					X	X	X	X	
5	84	Pulse input A1					X	X	X	X	
6	85	Pulse input B1					X	X	X	X	
7	1004	Operating hours					X	X	X	X	
8	175	Error hour counter					X	X	X	X	
9	86	t1 actual [2 decimals]			Int2		X	X	X		
10	87	t2 actual [2 decimals]			Int2		X	X	X		
11	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X		
12	80	Power actual					X	X	X		
13	143	Power max month					X	X	X		
14	389	Power max month date			Int2		X	X	X		
15	74	Flow V1 actual					X	X	X	X	
16	139	Flow V1 max month					X	X	X	X	
17	387	Flow V1 max month date			Int2		X	X	X	X	
18	369	Info bits					X	X	X	X	
19	348	Date and time					X	X	X	X	
20	60	Heat energy E1	Month Log	1			X		X		
21	63	Cooling energy E3	Month Log	1				X			
22	63	Cooling energy E3 extra digit	Month Log	1		OMS			X		
23	68	Volume V1	Month Log	1			X	X	X	X	
24	84	Pulse input A1	Month Log	1			X	X	X	X	
25	85	Pulse input B1	Month Log	1			X	X	X	X	
26	143	Power max month	Month Log	1			X	X	X		
27	389	Power max month date	Month Log	1	Int2		X	X	X		
28	139	Flow V1 max month	Month Log	1			X	X	X	X	
29	387	Flow V1 max month date	Month Log	1	Int2		X	X	X	X	
30	348	Date	Month Log	1	Int2		X	X	X	X	
31	647	Fluid type			Int1		X	X	X	X	
32	648	Fluid concentration			Int1		X	X	X	X	
33	404	Meter type			Int2		X	X	X	X	
34	1001	Fabrication number			BCD8		X	X	X	X	
35	393	Module type config No.	Module				X	X	X	X	
36	346	Module SW revision	Module				X	X	X	X	

Dedicated datagram with Mixed Fluid registers for MULTICAL® 603M and MULTICAL® 803M

6.12 20-00-312: PDO profile E10, monthly target data

Wired M-Bus datagram							ZZZ = 312				MULTICAL® 603
											MULTICAL® 803
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V	
1	60	Heat energy E1					X		X		
2	63	Cooling energy E3						X			
3	97	Energy E8					X	X	X		
4	110	Energy E9					X	X	X		
5	473	Energy E10					X	X	X		
6	68	Volume V1					X	X	X		
7	69	Volume V2					X	X	X		
8	72	Mass M1					X	X	X		
9	73	Mass M2					X	X	X		
10	84	Pulse input A1					X	X	X		
11	85	Pulse input B1					X	X	X		
12	1004	Operating hours					X	X	X		
13	175	Error hour counter					X	X	X		
14	86	t1 actual [2 decimals]			Int2		X	X	X		
15	87	t2 actual [2 decimals]			Int2		X	X	X		
16	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X		
17	88	t3 actual [2 decimals]			Int2		X	X	X		
18	80	Power actual					X	X	X		
19	74	Flow V1 actual					X	X	X		
20	369	Info bits					X	X	X		
21	348	Date and time					X	X	X		
22	60	Heat energy E1	Month Log	1			X		X		
23	63	Cooling energy E3	Month Log	1				X			
24	97	Energy E8	Month Log	1			X	X	X		
25	110	Energy E9	Month Log	1			X	X	X		
26	473	Energy E10	Month Log	1			X	X	X		
27	68	Volume V1	Month Log	1			X	X	X		
28	69	Volume V2	Month Log	1			X	X	X		
29	84	Pulse input A1	Month Log	1			X	X	X		
30	85	Pulse input B1	Month Log	1			X	X	X		
31	72	Mass M1	Month Log	1			X	X	X		
32	73	Mass M2	Month Log	1			X	X	X		
33	348	Date	Month Log	1	Int2		X	X	X		
34	404	Meter type			Int2		X	X	X		
35	1001	Fabrication number			BCD8		X	X	X		
36	393	Module type config No.	Module				X	X	X		
37	346	Module SW revision	Module				X	X	X		

Dedicated datagram for PDO installations.

PDO = Permanent Drift Overvågning (Permanent Operation Monitoring).

6.13 20-00-313: Mixed fluid. monthly target data, TA2, TA3

Wired M-Bus datagram							ZZZ = 313				MULTICAL® 603	MULTICAL® 803
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V		
1	60	Heat energy E1					X		X			
2	63	Cooling energy E3						X				
3	63	Cooling energy E3 extra digit				OMS			X			
4	68	Volume V1					X	X	X	X		
5	84	Pulse input A1					X	X	X	X		
6	85	Pulse input B1					X	X	X	X		
7	64	Tariff TA2					X	X	X			
8	65	Tariff TA3					X	X	X			
9	1004	Operating hours					X	X	X	X		
10	175	Error hour counter					X	X	X	X		
11	86	t1 actual [2 decimals]			Int2		X	X	X			
12	87	t2 actual [2 decimals]			Int2		X	X	X			
13	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X			
14	80	Power actual					X	X	X			
15	143	Power max month					X	X	X			
16	389	Power max month date			Int2		X	X	X			
17	74	Flow V1 actual					X	X	X	X		
18	139	Flow V1 max month					X	X	X	X		
19	387	Flow V1 max month date			Int2		X	X	X	X		
20	369	Info bits					X	X	X	X		
21	348	Date and time					X	X	X	X		
22	60	Heat energy E1	Month Log	1			X		X			
23	63	Cooling energy E3	Month Log	1				X				
24	63	Cooling energy E3 extra digit	Month Log	1		OMS			X			
25	68	Volume V1	Month Log	1			X	X	X	X		
26	84	Pulse input A1	Month Log	1			X	X	X	X		
27	85	Pulse input B1	Month Log	1			X	X	X	X		
28	143	Power max month	Month Log	1			X	X	X			
29	139	Flow V1 max month	Month Log	1			X	X	X	X		
30	348	Date	Month Log	1	Int2		X	X	X	X		
31	647	Fluid type			Int1		X	X	X	X		
32	648	Fluid concentration			Int1		X	X	X	X		
33	404	Meter type			Int2		X	X	X	X		
34	1001	Fabrication number			BCD8		X	X	X	X		
35	393	Module type config No.	Module				X	X	X	X		
36	346	Module SW revision	Module				X	X	X	X		

6.14 20-00-317: Heat energy with circulation + dV

Wired M-Bus datagram							ZZZ = 317				MULTICAL® 603
											MULTICAL® 803
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V	
1	60	Heat energy E1					X		X		
2	94	Heat energy E2					X	X	X		
3	63	Cooling energy E3				HCC			X		
4	61	Inlet energy E4					X	X	X		
5	62	Outlet energy E5					X	X	X		
6	96	Tap water energy E7					X	X	X		
7	178	Differential energy dE					X	X	X	X	
8	180	Differential volume dV					X	X	X	X	
9	68	Volume V1					X	X	X	X	
10	69	Volume V2					X	X	X	X	
11	1004	Operating hours					X	X	X	X	
12	86	t1 actual [2 decimals]			Int2		X	X	X		
13	87	t2 actual [2 decimals]			Int2		X	X	X		
14	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X		
15	88	t3 actual [2 decimals]			Int2		X	X	X		
16	74	Flow V1 actual					X	X	X	X	
17	75	Flow V2 actual					X	X	X	X	
18	80	Power actual					X	X	X		
19	369	Info bits					X	X	X	X	
20	347	Customer Number			BCD8		X	X	X	X	
21	1001	Fabrication number			BCD8		X	X	X	X	
22	404	Meter type			Int2		X	X	X	X	
23	393	Module type config No.	Module				X	X	X	X	
24	346	Module SW revision	Module				X	X	X	X	

6.15 20-00-320: Analog input profile II

Wired M-Bus datagram							ZZZ = 320				MULTICAL® 603	MULTICAL® 803
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V		
1	60	Heat energy E1					X		X			
2	63	Cooling energy E3						X				
3	63	Cooling energy E3				HCC			X			
4	68	Volume V1					X	X	X	X		
5	86	t1 actual [2 decimals]			Int2		X	X	X			
6	87	t2 actual [2 decimals]			Int2		X	X	X			
7	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X			
8	80	Power actual					X	X	X			
9	74	Flow V1 actual					X	X	X	X		
10	91	P1 actual - part 1					X	X	X	X		
11	91	P1 actual - part 2					X	X	X	X		
12	91	P1 actual - part 3					X	X	X	X		
13	92	P2 actual - part 1					X	X	X	X		
14	92	P2 actual - part 2					X	X	X	X		
15	92	P2 actual - part 3					X	X	X	X		
16	369	Info bits					X	X	X	X		
17	404	Meter type			Int2		X	X	X	X		
18	1001	Fabrication number			BCD8		X	X	X	X		
19	393	Module type config No.	Module				X	X	X	X		
20	346	Module SW revision	Module				X	X	X	X		

7 Wired M-Bus datagrams for MULTICAL® 803

The following Wired M-Bus Datagrams are applicable for all wired M-Bus modules used in MULTICAL® 803.

The datagrams are sorted by their ZZZ code. If datagrams intended for MULTICAL® 803 are used in MULTICAL® 403 or MULTICAL® 603 some registers will not be present.

7.1 20-00-401: 9 digit control profile

Wired M-Bus datagram		ZZZ = 401					MULTICAL® 803			
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	624	Heat energy E1 extra digit					X		X	
2	623	Cooling energy E3 extra digit						X		
3	623	Cooling energy E3 extra digit				OMS			X	
4	622	Volume V1 extra digit					X	X	X	X
5	86	t1 actual [2 decimals]			Int2		X	X	X	
6	87	t2 actual [2 decimals]			Int2		X	X	X	
7	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X	
8	80	Power actual					X	X	X	
9	74	Flow V1 actual					X	X	X	X
10	369	Info bits					X	X	X	X
11	404	Meter type			Int2		X	X	X	X
12	1001	Fabrication number			BCD8		X	X	X	X
13	393	Module type config No.	Module				X	X	X	X
14	346	Module SW revision	Module				X	X	X	X

7.2 20-00-402: Control energy profile E2, E12

Wired M-Bus datagram		ZZZ = 402					MULTICAL® 803			
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	94	Heat energy E2					X	X	X	
3	63	Cooling energy E3						X		
4	63	Cooling energy E3 extra digit				OMS			X	
5	611	Energy E12					X	X	X	
6	68	Volume V1					X	X	X	X
7	69	Volume V2					X	X	X	X
8	84	Pulse input A1					X	X	X	X
9	85	Pulse input B1					X	X	X	X
10	86	t1 actual [2 decimals]			Int2		X	X	X	
11	87	t2 actual [2 decimals]			Int2		X	X	X	
12	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X	
13	88	t3 actual [2 decimals]			Int2		X	X	X	
14	122	t4 actual [2 decimals]			Int2		X	X	X	
15	80	Power actual					X	X	X	
16	74	Flow V1 actual					X	X	X	X
17	75	Flow V2 actual					X	X	X	X
18	369	Info bits					X	X	X	X
19	404	Meter type			Int2		X	X	X	X
20	1001	Fabrication number			BCD8		X	X	X	X
21	393	Module type config No.	Module				X	X	X	X
22	346	Module SW revision	Module				X	X	X	X

8 Wireless M-Bus datagrams

Configuration of Wireless M-Bus datagrams follows this method.

This table only shows a small part of the available datagrams, just to indicate how the Datagram naming and ordering are made. All the shown datagrams for XX=32 are also available for XX=33.

See the table of content, for all included wireless datagrams, or look through the following pages.

	XX	-	YY	-	ZZZ
Module Type					
Wireless M-Bus, inputs (In-A, In-B), 868 MHz	32				
Wireless M-Bus, outputs (Out-C, Out-D), 868 MHz	33				
System Configuration					
C1, 16 s interval, 25 mW, Walk-by/Drive-by, Frame format B			10		
C1, 96 s interval, 25 mW, Fixed Network, Frame format B			11		
C1, 16 s interval, 25 mW, Frame format B			12		
C1, Fixed Network, Frame format A, 15 min./25 mW			15		
T1 OMS, 16 sec. interval, Walk-by/Drive-by, Frame format A			20		
T1 OMS, 15 min. interval, Fixed Network, Frame format A			21		
T1 BSI compliant, 16 sec/25 mW, Walk-by/Drive-by			22		
T1, BSI, 14 min interval, 25 mW, Fixed Network, Frame format A			23		
T1 OMS, 12 sec. interval 25 mW			24		
...					
Datagrams for MULTICAL® 403,603,803					
C1, Standard registers					101
C1, Alternative registers					102
...					...
C1, Fixed Network, 25 mW, High resolution datagram					402

9 Wireless M-Bus datagrams for MULTICAL® 403, MULTICAL® 603 and MULTICAL® 803

The following Wireless M-Bus Datagrams are applicable for all wired Wireless M-Bus modules used in both MULTICAL® 403, MULTICAL® 603 and MULTICAL® 803. The datagrams are sorted by where they are used, and then by their YY and ZZZ code.

9.1 32-10-101: C1, Drive-by, standard registers

Wireless M-Bus datagram		YY = 10 ZZZ = 101	Interval: 16 s 25 mW	Walk-by/Drive-by C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803					
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	97	Energy E8					X	X	X	
5	110	Energy E9					X	X	X	
6	68	Volume V1					X	X	X	X
7	74	Flow V1 actual					X	X	X	
8	86	t1 actual [2 decimals]			Int2		X	X	X	
9	87	t2 actual [2 decimals]			Int2		X	X	X	
10	369	Info bits					X	X	X	X
11	348	Date			Int2		X	X	X	X
12	60	Heat energy E1	Month Log	1			X		X	
13	63	Cooling energy E3	Month Log	1				X		
14	63	Cooling energy E3	Month Log	1		HCC			X	
15	68	Volume V1	Month Log	1			X	X	X	X
16	348	Date	Month Log	1	Int2		X	X	X	X

9.2 32-10-102: C1, Drive-by, alternative registers

Wireless M-Bus datagram	YY = 10 ZZZ = 102	Interval: 16 s 25 mW	Walk-by/Drive-by C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	97	Energy E8					X	X	X	
5	110	Energy E9					X	X	X	
6	68	Volume V1					X	X	X	X
7	84	Pulse input A1					X	X	X	X
8	85	Pulse input B1					X	X	X	X
9	74	Flow V1 actual					X	X	X	
10	86	t1 actual [2 decimals]			Int2		X	X	X	
11	87	t2 actual [2 decimals]			Int2		X	X	X	
12	128	Power max year					X	X	X	
13	64	Tariff TA2					X	X	X	
14	65	Tariff TA3					X	X	X	
15	369	Info bits					X	X	X	X
16	348	Date			Int2		X	X	X	X
17	60	Heat energy E1	Month Log	1			X		X	
18	63	Cooling energy E3	Month Log	1				X		
19	63	Cooling energy E3	Month Log	1		HCC			X	
20	68	Volume V1	Month Log	1			X	X	X	X
21	84	Pulse input A1	Month Log	1			X	X	X	X
22	85	Pulse input B1	Month Log	1			X	X	X	X
23	348	Date	Month Log	1	Int2		X	X	X	X

9.3 32-10-109: C1, Drive-by, heat with discount and surcharge, A1, A2

Wireless M-Bus datagram	YY = 10	Interval: 16 s	Walk-by/Drive-by	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
	ZZZ = 109	25 mW	C1, 868 MHz	
			Frame format B	

No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	364	Heat energy A1					X	X	X	
5	365	Heat energy A2					X	X	X	
6	84	Pulse input A1					X	X	X	X
7	85	Pulse input B1					X	X	X	X
8	74	Flow V1 actual					X	X	X	
9	64	Tariff TA2					X	X	X	
10	65	Tariff TA3					X	X	X	
11	362	Tariff TA4					X	X	X	
12	86	t1 actual [2 decimals]			Int2		X	X	X	
13	87	t2 actual [2 decimals]			Int2		X	X	X	
14	80	Power actual					X	X	X	
15	60	Heat energy E1	Month Log	1			X		X	
16	63	Cooling energy E3	Month Log	1				X		
17	63	Cooling energy E3	Month Log	1		HCC			X	
18	364	Heat energy A1	Month Log	1			X	X	X	
19	365	Heat energy A2	Month Log	1			X	X	X	
20	68	Volume V1	Month Log	1			X	X	X	X
21	84	Pulse input A1	Month Log	1			X	X	X	X
22	85	Pulse input B1	Month Log	1			X	X	X	X
23	348	Date	Month Log	1	Int2		X	X	X	X
24	64	Tariff TA2	Month Log	1			X	X	X	
25	65	Tariff TA3	Month Log	1			X	X	X	
26	362	Tariff TA4	Month Log	1			X	X	X	
27	80	Power actual	Month Log	1			X	X	X	
28	74	Flow V1 actual	Month Log	1			X	X	X	
29	348	Date	Day Log	2	Int2		X	X	X	X

9.4 32-10-114: C1, Drive-by, heat with discount and surcharge, A1, A2

Wireless M-Bus datagram	YY = 10 ZZZ = 114	Interval: 16 s 25 mW	Walk-by/Drive-by C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	364	Heat energy A1					X	X	X	
5	365	Heat energy A2					X	X	X	
6	84	Pulse input A1					X	X	X	X
7	85	Pulse input B1					X	X	X	X
8	74	Flow V1 actual					X	X	X	
9	64	Tariff TA2					X	X	X	
10	65	Tariff TA3					X	X	X	
11	362	Tariff TA4					X	X	X	
12	86	t1 actual [2 decimals]			Int2		X	X	X	
13	87	t2 actual [2 decimals]			Int2		X	X	X	
14	80	Power actual					X	X	X	
15	60	Heat energy E1	Month Log	1			X		X	
16	63	Cooling energy E3	Month Log	1				X		
17	63	Cooling energy E3	Month Log	1		HCC			X	
18	364	Heat energy A1	Month Log	1			X	X	X	
19	365	Heat energy A2	Month Log	1			X	X	X	
20	68	Volume V1	Month Log	1			X	X	X	X
21	84	Pulse input A1	Month Log	1			X	X	X	X
22	85	Pulse input B1	Month Log	1			X	X	X	X
23	64	Tariff TA2	Month Log	1			X	X	X	
24	65	Tariff TA3	Month Log	1			X	X	X	
25	362	Tariff TA4	Month Log	1			X	X	X	
26	143	Power max month	Month Log	1			X	X	X	
27	389	Power max month date	Month Log	1	Int2		X	X	X	
28	139	Flow V1 max month	Month Log	1			X	X	X	X
29	387	Flow V1 max month date	Month Log	1	Int2		X	X	X	X

9.5 32-10-126: C1, flow, power, TA2, TA3, TA4 - actual and monthly

Wireless M-Bus datagram	YY = 10	Interval: 16 s	Walk-by/Drive-by	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
	ZZZ = 126	25 mW	C1, 868 MHz	
			Frame format B	

No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	348	Date			Int2		X	X	X	X
2	60	Heat energy E1					X		X	
3	68	Volume V1					X	X	X	X
4	74	Flow V1 actual					X	X	X	
5	64	Tariff TA2					X	X	X	
6	65	Tariff TA3					X	X	X	
7	362	Tariff TA4					X	X	X	
8	86	t1 actual [2 decimals]			Int2		X	X	X	X
9	87	t2 actual [2 decimals]			Int2		X	X	X	X
10	80	Power actual					X	X	X	
11	369	Info bits					X	X	X	X
12	348	Date	Month Log	1	Int2		X	X	X	X
13	60	Heat energy E1	Month Log	1			X		X	
14	68	Volume V1	Month Log	1			X	X	X	X
15	64	Tariff TA2	Month Log	1			X	X	X	
16	65	Tariff TA3	Month Log	1			X	X	X	
17	362	Tariff TA4	Month Log	1			X	X	X	
18	143	Power max month	Month Log	1			X	X	X	
19	389	Power max month date	Month Log	1	Int2		X	X	X	
20	139	Flow V1 max month	Month Log	1			X	X	X	X
21	387	Flow V1 max month date	Month Log	1	Int2		X	X	X	X

9.6 32-10-130: C1, Drive-by, alternative registers incl. E1 + E3

Wireless M-Bus datagram	YY = 10 ZZZ = 130	Interval: 16 s 25 mW	Walk-by/Drive-by C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X	X	X	
2	63	Cooling energy E3					X	X	X	
3	63	Cooling energy E3				HCC	X	X	X	
4	97	Energy E8					X	X	X	
5	110	Energy E9					X	X	X	
6	68	Volume V1					X	X	X	X
7	84	Pulse input A1					X	X	X	X
8	85	Pulse input B1					X	X	X	X
9	74	Flow V1 actual					X	X	X	X
10	86	t1 actual [2 decimals]			Int2		X	X	X	
11	87	t2 actual [2 decimals]			Int2		X	X	X	
12	128	Power max year					X	X	X	
13	64	Tariff TA2					X	X	X	
14	65	Tariff TA3					X	X	X	
15	369	Info bits					X	X	X	X
16	348	Date			Int2		X	X	X	X
17	60	Heat energy E1	Month Log	1			X		X	
18	63	Cooling energy E3	Month Log	1				X		
19	63	Cooling energy E3	Month Log	1		HCC			X	
20	68	Volume V1	Month Log	1			X	X	X	X
21	84	Pulse input A1	Month Log	1			X	X	X	X
22	85	Pulse input B1	Month Log	1			X	X	X	X
23	348	Date	Month Log	1	Int2		X	X	X	X

9.7 32-11-103: C1, Fixed Network, standard registers

Wireless M-Bus datagram	YY = 11 ZZZ = 103	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	97	Energy E8					X	X	X	
5	110	Energy E9					X	X	X	
6	68	Volume V1					X	X	X	X
7	74	Flow V1 actual					X	X	X	X
8	86	t1 actual [2 decimals]			Int2		X	X	X	X
9	87	t2 actual [2 decimals]			Int2		X	X	X	
10	369	Info bits					X	X	X	X

9.8 32-11-104: C1, Fixed Network target data

Wireless M-Bus datagram	YY = 11 ZZZ = 104	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	68	Volume V1					X		X	X
3	74	Flow V1 actual					X		X	X
4	86	t1 actual [2 decimals]			Int2		X		X	X
5	87	t2 actual [2 decimals]			Int2		X		X	
6	348	Date	Month Log	1	Int2		X		X	
7	60	Heat energy E1	Month Log	1			X		X	
8	68	Volume V1	Month Log	1			X		X	
9	369	Info bits					X		X	
10	80	Power actual	Year Log	2			X		X	
11	80	Power actual	Month Log	1			X		X	

9.9 32-11-105: C1, Fixed Network, w/T1-T2, power

Wireless M-Bus datagram	YY = 11 ZZZ = 105	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	97	Energy E8					X	X	X	
5	110	Energy E9					X	X	X	
6	68	Volume V1					X	X	X	X
7	74	Flow V1 actual					X	X	X	X
8	86	t1 actual [2 decimals]			Int2		X	X	X	X
9	87	t2 actual [2 decimals]			Int2		X	X	X	
10	369	Info bits					X	X	X	X
11	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X	
12	80	Power actual					X	X	X	

9.10 32-11-106: C1, Fixed Network incl. yearly peak power

Wireless M-Bus datagram	YY = 11 ZZZ = 106	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	97	Energy E8					X	X	X	
3	110	Energy E9					X	X	X	
4	68	Volume V1					X	X	X	X
5	86	t1 actual [2 decimals]			Int2		X	X	X	X
6	87	t2 actual [2 decimals]			Int2		X	X	X	
7	74	Flow V1 actual					X	X	X	X
8	80	Power actual					X	X	X	
9	128	Power max year	Year Log	1			X	X	X	
10	1004	Operating hours					X	X	X	X
11	369	Info bits					X	X	X	X

9.11 32-11-107: C1, Fixed Network, In-A - In-B

Wireless M-Bus datagram	YY = 11 ZZZ = 107	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	84	Pulse input A1					X	X	X	X
5	85	Pulse input B1					X	X	X	X
6	68	Volume V1					X	X	X	X
7	74	Flow V1 actual					X	X	X	X
8	86	t1 actual [2 decimals]			Int2		X	X	X	X
9	87	t2 actual [2 decimals]			Int2		X	X	X	
10	369	Info bits					X	X	X	X

9.12 32-11-110: C1, Fixed Network, month power, month flow

Wireless M-Bus datagram	YY = 11 ZZZ = 110	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	60	Heat energy E1	Month Log	1			X		X	
5	68	Volume V1					X	X	X	X
6	86	t1 actual [2 decimals]			Int2		X	X	X	
7	87	t2 actual [2 decimals]			Int2		X	X	X	
8	74	Flow V1 actual					X	X	X	X
9	80	Power actual					X	X	X	
10	143	Power max month	Month Log	1			X	X	X	
11	139	Flow V1 max month	Month Log	1			X	X	X	X
12	1004	Operating hours					X	X	X	X
13	369	Info bits					X	X	X	X

9.13 32-11-111: C1, Fixed Network, high resolution

Wireless M-Bus datagram	YY = 11 ZZZ = 111	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	97	Energy E8					X	X	X	
5	110	Energy E9					X	X	X	
6	68	Volume V1					X	X	X	X
7	74	Flow V1 actual					X	X	X	X
8	86	t1 actual [2 decimals]			Int2		X	X	X	X
9	87	t2 actual [2 decimals]			Int2		X	X	X	
10	369	Info bits					X	X	X	X

9.14 32-11-112: C1, Fixed Network, target data

Wireless M-Bus datagram	YY = 11 ZZZ = 112	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	68	Volume V1					X		X	X
3	74	Flow V1 actual					X		X	X
4	86	t1 actual [2 decimals]			Int2		X		X	X
5	87	t2 actual [2 decimals]			Int2		X		X	
6	348	Date	Month Log	1	Int2		X		X	
7	60	Heat energy E1	Month Log	1			X		X	
8	68	Volume V1	Month Log	1			X		X	
9	369	Info bits					X		X	
10	128	Power max year	Year Log	2			X		X	
11	143	Power max month	Month Log	1			X		X	

9.15 32-11-117: C1, Fixed Network, yearly max flow

Wireless M-Bus datagram	YY = 11 ZZZ = 117	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	97	Energy E8					X	X	X	
3	110	Energy E9					X	X	X	
4	68	Volume V1					X	X	X	X
5	86	t1 actual [2 decimals]			Int2		X	X	X	X
6	87	t2 actual [2 decimals]			Int2		X	X	X	
7	74	Flow V1 actual					X	X	X	X
8	80	Power actual					X	X	X	
9	124	Flow V1 max year	Year Log	1			X	X	X	
10	1004	Operating hours					X	X	X	X
11	369	Info bits					X	X	X	X

9.16 32-11-118: C1, Fixed Network, month power

Wireless M-Bus datagram	YY = 11 ZZZ = 118	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	97	Energy E8					X	X	X	
5	110	Energy E9					X	X	X	
6	60	Heat energy E1	Month Log	1			X		X	
7	68	Volume V1					X	X	X	X
8	86	t1 actual [2 decimals]			Int2		X	X	X	
9	87	t2 actual [2 decimals]			Int2		X	X	X	
10	74	Flow V1 actual					X	X	X	X
11	80	Power actual					X	X	X	
12	143	Power max month	Month Log	1			X	X	X	X
13	369	Info bits					X	X	X	X

9.17 32-11-119: C1, Fixed Network incl. power and flow max. month

Wireless M-Bus datagram	YY = 11 ZZZ = 119	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	97	Energy E8					X	X	X	
3	110	Energy E9					X	X	X	
4	68	Volume V1					X	X	X	X
5	86	t1 actual [2 decimals]			Int2		X	X	X	X
6	87	t2 actual [2 decimals]			Int2		X	X	X	
7	74	Flow V1 actual					X	X	X	X
8	80	Power actual					X	X	X	
9	143	Power max month	Month Log	1			X	X	X	
10	139	Flow V1 max month	Month Log	1			X	X	X	
11	1004	Operating hours					X	X	X	X
12	369	Info bits					X	X	X	X

9.18 32-11-121: C1, Fixed Network, TA3

Wireless M-Bus datagram	YY = 11 ZZZ = 121	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	60	Heat energy E1	Month Log	1			X		X	
5	68	Volume V1					X	X	X	X
6	65	Tariff TA3					X	X	X	
7	86	t1 actual [2 decimals]			Int2		X	X	X	
8	87	t2 actual [2 decimals]			Int2		X	X	X	
9	74	Flow V1 actual					X	X	X	X
10	143	Power max month	Month Log	1			X	X	X	
11	139	Flow V1 max month	Month Log	1			X	X	X	X
12	1004	Operating hours					X	X	X	X
13	369	Info bits					X	X	X	X

9.19 32-11-128: Standard DK heat meter

Wireless M-Bus datagram	YY = 11 ZZZ = 128	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	97	Energy E8					X	X	X	
3	110	Energy E9					X	X	X	
4	68	Volume V1					X	X	X	X
5	74	Flow V1 actual					X	X	X	X
6	80	Power actual					X	X	X	
7	86	t1 actual [2 decimals]			Int2		X	X	X	X
8	87	t2 actual [2 decimals]			Int2		X	X	X	
9	369	Info bits					X	X	X	X
10	1004	Operating hours					X	X	X	X
11	124	Flow V1 max year					X	X	X	X
12	128	Power max year					X	X	X	X

9.20 32-11-134: Fixed network, month power and date

Wireless M-Bus datagram	YY = 11 ZZZ = 134	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	97	Energy E8					X	X	X	
5	110	Energy E9					X	X	X	
6	60	Heat energy E1	Month Log	1			X		X	
7	68	Volume V1					X	X	X	X
8	86	t1 actual [2 decimals]			Int2		X	X	X	X
9	87	t2 actual [2 decimals]			Int2		X	X	X	
10	74	Flow V1 actual					X	X	X	X
11	348	Date	Month Log	1	Int2		X	X	X	X
12	143	Power max month	Month Log	1			X	X	X	
13	369	Info bits					X	X	X	X
14	63	Cooling energy E3	Month Log	1				X		
15	63	Cooling energy E3	Month Log	1		HCC			X	

9.21 32-11-211: Fixed network, monthly target E1 incl. power and flow max. month

Wireless M-Bus datagram	YY = 11 ZZZ = 211	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	97	Energy E8					X	X	X	
3	110	Energy E9					X	X	X	
4	68	Volume V1					X	X	X	X
5	74	Flow V1 actual					X	X	X	X
6	86	t1 actual [2 decimals]					X	X	X	
7	87	t2 actual [2 decimals]					X	X	X	
8	80	Power actual					X	X	X	
9	60	Heat energy E1	Month Log	1			X		X	X
10	143	Power max month	Month Log	1			X	X	X	
11	139	Flow V1 max month	Month Log	1			X	X	X	X
12	1004	Operating hours					X	X	X	X
13	369	Info bits					X	X	X	X

9.22 32-11-135: C1, Fixed Network, month power flow energy

Wireless M-Bus datagram	YY = 11 ZZZ = 135	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	60	Heat energy E1	Month Log	1			X		X	
3	139	Flow V1 max month	Month Log	1			X	X	X	X
4	68	Volume V1					X	X	X	X
5	86	t1 actual [2 decimals]			Int2		X	X	X	
6	87	t2 actual [2 decimals]			Int2		X	X	X	
7	80	Power actual					X	X	X	
8	143	Power max month	Month Log	1			X	X	X	
9	389	Power max month date	Month Log	1	Int2		X	X	X	
10	1004	Operating hours					X	X	X	X
11	369	Info bits					X	X	X	X
12	387	Flow V1 max month date	Month Log	1	Int2		X	X	X	X

9.23 32-11-137: Fixed network, month power flow energy volume

Wireless M-Bus datagram	YY = 11 ZZZ = 137	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	60	Heat energy E1	Month Log	1			X		X	
3	74	Flow V1 actual					X	X	X	X
4	139	Flow V1 max month	Month Log	1			X	X	X	X
5	68	Volume V1					X	X	X	X
6	86	t1 actual [2 decimals]			Int2		X	X	X	
7	87	t2 actual [2 decimals]			Int2		X	X	X	
8	80	Power actual					X	X	X	
9	143	Power max month	Month Log	1			X	X	X	
10	1004	Operating hours					X	X	X	X
11	369	Info bits					X	X	X	X
12	68	Volume V1	Month Log	1			X	X	X	X

9.24 32-11-138: C1, Fixed Network, KAP, power max. month date

Wireless M-Bus datagram	YY = 11 ZZZ = 138	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	68	Volume V1					X	X	X	X
3	86	t1 actual [2 decimals]			Int2		X	X	X	
4	87	t2 actual [2 decimals]			Int2		X	X	X	
5	74	Flow V1 actual					X	X	X	X
6	80	Power actual					X	X	X	
7	1004	Operating hours					X	X	X	
8	369	Info bits					X	X	X	X
9	139	Flow V1 max month	Month Log	1			X	X	X	X
10	143	Power max month	Month Log	1			X	X	X	X
11	389	Power max month date	Month Log	1	Int2		X	X	X	X
12	60	Heat energy E1	Month Log	1			X		X	X

9.25 32-11-140: C1, Fixed Network, V1 + V2 + E8 + E9

Wireless M-Bus datagram	YY = 11 ZZZ = 140	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	369	Info bits					X	X	X	X
2	1004	Operating hours					X	X	X	X
3	68	Volume V1					X	X	X	X
4	69	Volume V2					X	X	X	X
5	60	Heat energy E1					X		X	
6	63	Cooling energy E3						X		
7	63	Cooling energy E3				HCC			X	
8	97	Energy E8					X	X	X	
9	110	Energy E9					X	X	X	
10	86	t1 actual [2 decimals]			Int2		X	X	X	
11	87	t2 actual [2 decimals]			Int2		X	X	X	
12	139	Flow V1 max month	Month Log	1			X	X		X
13	143	Power max month	Month Log	1			X	X	X	

9.26 32-12-105: C1, Fixed Network, w/T1-T2, power

Wireless M-Bus datagram	YY = 12 ZZZ = 105	Interval: 16 s 25 mW	Walk-by/Drive-by C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	97	Energy E8					X	X	X	
5	110	Energy E9					X	X	X	
6	68	Volume V1					X	X	X	X
7	74	Flow V1 actual					X	X	X	X
8	86	t1 actual [2 decimals]			Int2		X	X	X	X
9	87	t2 actual [2 decimals]			Int2		X	X	X	
10	369	Info bits					X	X	X	X
11	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X	
12	80	Power actual					X	X	X	

9.27 32-12-108: C1, Drive-by, monthly target data

Wireless M-Bus datagram	YY = 12 ZZZ = 108	Interval: 16 s 25 mW	Walk-by/Drive-by C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X	X	X	
2	68	Volume V1					X	X	X	X
3	74	Flow V1 actual					X	X	X	X
4	86	t1 actual [2 decimals]			Int2		X	X	X	X
5	87	t2 actual [2 decimals]			Int2		X	X	X	
6	369	Info bits					X	X	X	X
7	60	Heat energy E1	Month Log	1			X	X	X	
8	68	Volume V1	Month Log	1			X	X	X	X
9	348	Date	Month Log	1	Int2		X	X	X	X

9.28 32-12-110: C1, 16. sec., month power, month flow

Wireless M-Bus datagram	YY = 12 ZZZ = 110	Interval: 16 s 25 mW	Walk-by/Drive-by C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	60	Heat energy E1	Month Log	1			X		X	
5	68	Volume V1					X	X	X	X
6	86	t1 actual [2 decimals]			Int2		X	X	X	
7	87	t2 actual [2 decimals]			Int2		X	X	X	
8	74	Flow V1 actual					X	X	X	X
9	80	Power actual					X	X	X	
10	143	Power max month	Month Log	1			X	X	X	
11	139	Flow V1 max month	Month Log	1			X	X	X	X
12	1004	Operating hours					X	X	X	X
13	369	Info bits					X	X	X	X

9.29 32-12-115: C1, Drive-by, yearly target data

Wireless M-Bus datagram	YY = 12 ZZZ = 115	Interval: 16 s 25 mW	Walk-by/Drive-by C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X	X	X	
2	68	Volume V1					X	X	X	X
3	74	Flow V1 actual					X	X	X	X
4	86	t1 actual [2 decimals]			Int2		X	X	X	X
5	87	t2 actual [2 decimals]			Int2		X	X	X	
6	369	Info bits					X	X	X	X
7	60	Heat energy E1	Year Log	1			X	X	X	
8	68	Volume V1	Year Log	1			X	X	X	X
9	348	Date	Year Log	1	Int2		X	X	X	X

9.30 32-12-116: C1, Drive-by, tarif 2, 3, 4, power

Wireless M-Bus datagram	YY = 12 ZZZ = 116	Interval: 16 s 25 mW	Walk-by/Drive-by C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	64	Tariff TA2					X	X	X	X
5	65	Tariff TA3					X	X	X	X
6	362	Tariff TA4					X	X	X	X
7	68	Volume V1					X	X	X	X
8	84	Pulse input A1					X	X	X	X
9	85	Pulse input B1					X	X	X	X
10	1004	Operating hours					X	X	X	X
11	369	Info bits					X	X	X	X
12	143	Power max month	Month Log	1			X	X	X	X
13	389	Power max month date	Month Log	1	Int2		X	X	X	X

9.31 32-12-118: C1, Fixed Network, month power

Wireless M-Bus datagram	YY = 12 ZZZ = 118	Interval: 16 s 25 mW	Walk-by/Drive-by C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	97	Energy E8					X	X	X	
5	110	Energy E9					X	X	X	
6	60	Heat energy E1	Month Log	1			X		X	
7	68	Volume V1					X	X	X	X
8	86	t1 actual [2 decimals]			Int2		X	X	X	
9	87	t2 actual [2 decimals]			Int2		X	X	X	
10	74	Flow V1 actual					X	X	X	X
11	80	Power actual					X	X	X	
12	143	Power max month	Month Log	1			X	X	X	X
13	369	Info bits					X	X	X	X

9.32 32-12-128: Standard DK heat meter

Wireless M-Bus datagram	YY = 12	Interval: 16 s	Walk-by/Drive-by	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
	ZZZ = 128	25 mW	C1, 868 MHz	
			Frame format B	

No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	97	Energy E8					X	X	X	
3	110	Energy E9					X	X	X	
4	68	Volume V1					X	X	X	X
5	74	Flow V1 actual					X	X	X	X
6	80	Power actual					X	X	X	
7	86	t1 actual [2 decimals]			Int2		X	X	X	X
8	87	t2 actual [2 decimals]			Int2		X	X	X	
9	369	Info bits					X	X	X	X
10	1004	Operating hours					X	X	X	X
11	124	Flow V1 max year					X	X	X	X
12	128	Power max year					X	X	X	X

9.33 32-12-131: C1, Fixed Network incl. E3, power and flow max. month

Wireless M-Bus datagram	YY = 12	Interval: 16 s	Walk-by/Drive-by	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
	ZZZ = 131	25 mW	C1, 868 MHz	
			Frame format B	

No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	97	Energy E8					X	X	X	
5	110	Energy E9					X	X	X	
6	60	Heat energy E1	Month Log	1			X		X	
7	68	Volume V1					X	X	X	X
8	86	t1 actual [2 decimals]			Int2		X	X	X	X
9	87	t2 actual [2 decimals]			Int2		X	X	X	
10	74	Flow V1 actual					X	X	X	X
11	143	Power max month	Month Log	1			X	X	X	
12	68	Volume V1	Month Log	1			X	X	X	X
13	369	Info bits					X	X	X	X

9.34 32-12-205: T1 OMS, E1 3 x last month

Wireless M-Bus datagram		YY = 12 ZZZ = 205	Interval: 16 s 25 mW	Walk-by/Drive-by C1, 868 MHz Frame format B	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803					
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3 extra digit				OMS	X		X	
4	68	Volume V1					X	X	X	X
5	369	Info bits					X	X	X	X
6	74	Flow V1 actual					X	X	X	X
7	86	t1 actual [2 decimals]			Int2		X	X	X	X
8	87	t2 actual [2 decimals]			Int2		X	X	X	
9	80	Power actual					X	X	X	
10	60	Heat energy E1	Month Log	1			X		X	
11	348	Date	Month Log	1	Int2		X		X	
12	60	Heat energy E1	Month Log	2			X		X	
13	348	Date	Month Log	2	Int2		X		X	
14	60	Heat energy E1	Month Log	3			X		X	
15	348	Date	Month Log	3	Int2		X		X	

9.35 32-15-201: C1, Fixed Network, frame format A, 15 min.

Wireless M-Bus datagram		YY = 15 ZZZ = 201	Interval: 15 m 25 mW	Fixed Network C1 Frame format A	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803					
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	68	Volume V1					X	X	X	X
5	369	Info bits					X	X	X	X
6	74	Flow V1 actual					X	X	X	X
7	86	t1 actual [2 decimals]			Int2		X	X	X	X
8	87	t2 actual [2 decimals]			Int2		X	X	X	
9	80	Power actual					X	X	X	
10	348	Date			Int2		X	X	X	X
11	1004	Operating hours					X	X	X	X
12	348	Date	Month Log	1	Int2		X	X	X	X
13	60	Heat energy E1	Month Log	1			X		X	
14	63	Cooling energy E3	Month Log	1				X		
15	63	Cooling energy E3	Month Log	1		HCC			X	
16	68	Volume V1	Month Log	1			X	X	X	X
17	139	Flow V1 max month	Month Log	1			X	X	X	X

9.36 32-16-120: C1 BSI compliant, Drive-by, 16 sec

Wireless M-Bus datagram	YY = 16	Interval: 16 s	Walk-by/Drive-by	MULTICAL® 403
	ZZZ = 120	25 mW	C1, 868 MHz	MULTICAL® 603
Security Profile B	MULTICAL® 803		Frame format A	MULTICAL® 803

No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3 extra digit				OMS	X		X	
4	68	Volume V1					X	X	X	X
5	369	Info bits					X	X	X	X
6	74	Flow V1 actual					X	X	X	X
7	86	t1 actual [2 decimals]			Int2		X	X	X	X
8	87	t2 actual [2 decimals]			Int2		X	X	X	X
9	80	Power actual					X	X	X	
10	60	Heat energy E1	Month Log	1			X		X	
11	348	Date	Month Log	1	Int2		X	X	X	
12	60	Heat energy E1	Month Log	2			X		X	
13	348	Date	Month Log	2	Int2		X	X	X	
14	60	Heat energy E1	Month Log	3			X		X	
15	348	Date	Month Log	3	Int2		X	X	X	

9.37 32-20-201: T1 OMS, Walk-by/Drive-by

Wireless M-Bus datagram	YY = 20	Interval: 16 s	Walk-by/Drive-by	MULTICAL® 403
	ZZZ = 201	25 mW	T1 OMS, 868 MHz	MULTICAL® 603
			Frame format A	MULTICAL® 803

No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	68	Volume V1					X	X	X	X
5	369	Info bits					X	X	X	X
6	74	Flow V1 actual					X	X	X	X
7	86	t1 actual [2 decimals]			Int2		X	X	X	X
8	87	t2 actual [2 decimals]			Int2		X	X	X	
9	80	Power actual					X	X	X	
10	348	Date			Int2		X	X	X	X
11	1004	Operating hours					X	X	X	X
12	348	Date	Month Log	1	Int2		X	X	X	X
13	60	Heat energy E1	Month Log	1			X		X	
14	63	Cooling energy E3	Month Log	1				X		
15	63	Cooling energy E3	Month Log	1		HCC			X	
16	68	Volume V1	Month Log	1			X	X	X	X
17	139	Flow V1 max month	Month Log	1			X	X	X	X

9.38 32-20-203: T1 OMS, In-A + In-B, Walk-by/Drive-by

Wireless M-Bus datagram	YY = 20 ZZZ = 203	Interval: 16 s 25 mW	Walk-by/Drive-by T1 OMS, 868 MHz Frame format A	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	68	Volume V1					X	X	X	X
5	369	Info bits					X	X	X	X
6	74	Flow V1 actual					X	X	X	X
7	86	t1 actual [2 decimals]			Int2		X	X	X	X
8	87	t2 actual [2 decimals]			Int2		X	X	X	
9	84	Pulse input A1					X	X	X	X
10	85	Pulse input B1					X	X	X	X
11	80	Power actual					X	X	X	
12	348	Date			Int2		X	X	X	X
13	348	Date	Month Log	1	Int2		X	X	X	X
14	60	Heat energy E1	Month Log	1			X		X	
15	63	Cooling energy E3	Month Log	1				X		
16	63	Cooling energy E3	Month Log	1		HCC			X	
17	139	Flow V1 max month	Month Log	1			X	X	X	X

9.39 32-20-205: T1 OMS, E1 3 x last month

Wireless M-Bus datagram	YY = 20 ZZZ = 205	Interval: 16 s 25 mW	Walk-by/Drive-by T1 OMS, 868 MHz Frame format A	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3 extra digit				OMS	X		X	
4	68	Volume V1					X	X	X	X
5	369	Info bits					X	X	X	X
6	74	Flow V1 actual					X	X	X	X
7	86	t1 actual [2 decimals]			Int2		X	X	X	X
8	87	t2 actual [2 decimals]			Int2		X	X	X	
9	80	Power actual					X	X	X	
10	60	Heat energy E1	Month Log	1			X		X	
11	348	Date	Month Log	1	Int2		X		X	
12	60	Heat energy E1	Month Log	2			X		X	
13	348	Date	Month Log	2	Int2		X		X	
14	60	Heat energy E1	Month Log	3			X		X	
15	348	Date	Month Log	3	Int2		X		X	

9.40 32-21-201: T1 OMS, 868 MHz, 15 min. interval, Fixed Network, frame format A

Wireless M-Bus datagram	YY = 21	Interval: 15 m	Fixed Network	MULTICAL® 403	
	ZZZ = 201	25 mW	T1 OMS, 868 MHz		MULTICAL® 603
			Frame format A		MULTICAL® 803

No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	68	Volume V1					X	X	X	X
5	369	Info bits					X	X	X	X
6	74	Flow V1 actual					X	X	X	X
7	86	t1 actual [2 decimals]			Int2		X	X	X	X
8	87	t2 actual [2 decimals]			Int2		X	X	X	
9	80	Power actual					X	X	X	
10	348	Date			Int2		X	X	X	X
11	1004	Operating hours					X	X	X	X
12	348	Date	Month Log	1	Int2		X	X	X	X
13	60	Heat energy E1	Month Log	1			X		X	
14	63	Cooling energy E3	Month Log	1				X		
15	63	Cooling energy E3	Month Log	1		HCC			X	
16	68	Volume V1	Month Log	1			X	X	X	X
17	139	Flow V1 max month	Month Log	1			X	X	X	X

9.41 32-21-203: T1 OMS, Fixed Network, In-A + In-B

Wireless M-Bus datagram	YY = 21	Interval: 15 m	Fixed Network	MULTICAL® 403	
	ZZZ = 203	25 mW	T1 OMS, 868 MHz		MULTICAL® 603
			Frame format A		MULTICAL® 803

No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	68	Volume V1					X	X	X	X
5	369	Info bits					X	X	X	X
6	74	Flow V1 actual					X	X	X	X
7	86	t1 actual [2 decimals]			Int2		X	X	X	X
8	87	t2 actual [2 decimals]			Int2		X	X	X	
9	84	Pulse input A1					X	X	X	X
10	85	Pulse input B1					X	X	X	X
11	80	Power actual					X	X	X	
12	348	Date			Int2		X	X	X	X
13	348	Date	Month Log	1	Int2		X	X	X	X
14	60	Heat energy E1	Month Log	1			X		X	
15	63	Cooling energy E3	Month Log	1				X		
16	63	Cooling energy E3	Month Log	1		HCC			X	
17	139	Flow V1 max month	Month Log	1			X	X	X	X

9.42 32-22-202: T1 BSI compliant, 868 MHz, 16 sec, Walk-by/Drive-by

Wireless M-Bus datagram	YY = 22 ZZZ = 202	Interval: 16 s 25 mW	Walk-by/Drive-by T1 BSI compliant Frame format A	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	68	Volume V1					X	X	X	X
5	369	Info bits					X	X	X	X
6	74	Flow V1 actual					X	X	X	X
7	86	t1 actual [2 decimals]			Int2		X	X	X	X
8	87	t2 actual [2 decimals]			Int2		X	X		
9	80	Power actual					X	X	X	X
10	348	Date	Month Log	1	Int2		X	X	X	X
11	60	Heat energy E1	Month Log	1			X		X	
12	63	Cooling energy E3	Month Log	1				X		
13	63	Cooling energy E3	Month Log	1		HCC			X	
14	68	Volume V1	Month Log	1			X	X	X	X
15	139	Flow V1 max month	Month Log	1			X	X	X	X

9.43 32-23-202: T1 BSI compliant, 868 MHz, 14 min, Fixed Network

Wireless M-Bus datagram	YY = 23 ZZZ = 202	Interval: 14 m 25 mW	Fixed network T1 BSI compliant Frame format A	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	68	Volume V1					X	X	X	X
5	369	Info bits					X	X	X	X
6	74	Flow V1 actual					X	X	X	X
7	86	t1 actual [2 decimals]			Int2		X	X	X	X
8	87	t2 actual [2 decimals]			Int2		X	X		
9	80	Power actual					X	X	X	X
10	348	Date	Month Log	1	Int2		X	X	X	X
11	60	Heat energy E1	Month Log	1			X		X	
12	63	Cooling energy E3	Month Log	1				X		
13	63	Cooling energy E3	Month Log	1		HCC			X	
14	68	Volume V1	Month Log	1			X	X	X	X
15	139	Flow V1 max month	Month Log	1			X	X	X	X

9.44 32-24-204: T1 OMS, 868 MHz, 12 sec., DT

Wireless M-Bus datagram	YY = 24 ZZZ = 204	Interval: 12 s 25 mW	Walk-by/Drive-by T1 OMS Frame format A	MULTICAL® 403 MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	68	Volume V1					X	X	X	X
5	369	Info bits					X	X	X	X
6	74	Flow V1 actual					X	X	X	X
7	86	t1 actual [2 decimals]			Int2		X	X	X	X
8	87	t2 actual [2 decimals]			Int2		X	X	X	
9	80	Power actual					X	X	X	
10	348	Date			Int2		X	X	X	X
11	1004	Operating hours					X	X	X	X
12	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X	
13	348	Date	Month Log	1	Int2		X	X	X	X
14	60	Heat energy E1	Month Log	1			X		X	
15	63	Cooling energy E3	Month Log	1				X		
16	63	Cooling energy E3	Month Log	1		HCC			X	
17	68	Volume V1	Month Log	1			X	X	X	X

This datagram is no longer available!

10 Wireless M-Bus datagrams for MULTICAL® 603 and MULTICAL® 803

The following Wired M-Bus Datagrams are applicable for all wired Wireless M-Bus modules used in MULTICAL® 603/803. The datagrams are sorted by where they are used, and then by their YY and ZZZ code

10.1 32-11-301: C1, Fixed Network, PDO

Wireless M-Bus datagram		YY = 11 ZZZ = 301	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 603 MULTICAL® 803					
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	97	Energy E8					X	X	X	
3	110	Energy E9					X	X	X	
4	68	Volume V1					X	X	X	
5	69	Volume V2					X	X	X	
6	72	Mass M1					X	X	X	
7	73	Mass M2					X	X	X	
8	369	Info bits					X	X	X	
9	74	Flow V1 actual					X	X	X	
10	86	t1 actual [2 decimals]			Int2		X	X	X	
11	87	t2 actual [2 decimals]			Int2		X	X	X	
12	88	t3 actual [2 decimals]			Int2		X	X	X	

10.2 32-11-304: C1, Fixed Network, In-A1, In-A2, In-B1, In-B2

Wireless M-Bus datagram		YY = 11 ZZZ = 304	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 603 MULTICAL® 803					
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	63	Cooling energy E3						X		
3	63	Cooling energy E3				HCC			X	
4	84	Pulse input A1					X	X	X	X
5	85	Pulse input B1					X	X	X	X
6	224	Pulse input A2					X	X	X	X
7	225	Pulse input B2					X	X	X	X
8	68	Volume V1					X	X	X	X
9	74	Flow V1 actual					X	X	X	X
10	86	t1 actual [2 decimals]			Int2		X	X	X	X
11	87	t2 actual [2 decimals]			Int2		X	X	X	
12	369	Info bits					X	X	X	X

10.3 32-11-309: C1, Fixed Network, heat energy with circulation

Wireless M-Bus datagram	YY = 11 ZZZ = 309	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	94	Heat energy E2					X	X	X	
3	63	Cooling energy E3				HCC			X	
4	61	Inlet energy E4					X	X	X	
5	62	Outlet energy E5					X	X	X	
6	96	Tap water energy E7					X	X	X	
7	178	Differential energy dE					X	X	X	
8	68	Volume V1					X	X	X	X
9	69	Volume V2					X	X	X	X
10	1004	Operating hours					X	X	X	X
11	86	t1 actual [2 decimals]			Int2		X	X	X	
12	87	t2 actual [2 decimals]			Int2		X	X	X	
13	89	t1-t2 diff. temp. [2 decimals]			Int2		X	X	X	
14	88	t3 actual [2 decimals]			Int2		X	X	X	
15	74	Flow V1 actual					X	X	X	
16	75	Flow V2 actual					X	X	X	
17	369	Info bits					X	X	X	X

10.4 32-11-312: C1, Fixed Network, standard + flow V2

Wireless M-Bus datagram	YY = 11 ZZZ = 312	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	97	Energy E8					X	X	X	
3	110	Energy E9					X	X	X	
4	68	Volume V1					X	X	X	X
5	74	Flow V1 actual					X	X	X	X
6	75	Flow V2 actual					X	X	X	X
7	80	Power actual					X	X	X	
8	86	t1 actual [2 decimals]			Int2		X	X	X	X
9	87	t2 actual [2 decimals]			Int2		X	X	X	
10	369	Info bits					X	X	X	X
11	1004	Operating hours					X	X	X	X
12	124	Flow V1 max year					X	X	X	X
13	128	Power max year					X	X	X	X

10.5 32-14-302: C1, Fixed Network, PDO + In-A

Wireless M-Bus datagram		YY = 14 ZZZ = 302	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 603 MULTICAL® 803					
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	97	Energy E8					X	X	X	
3	110	Energy E9					X	X	X	
4	68	Volume V1					X	X	X	
5	69	Volume V2					X	X	X	
6	72	Mass M1					X	X	X	
7	73	Mass M2					X	X	X	
8	369	Info bits					X	X	X	
9	74	Flow V1 actual					X	X	X	
10	86	t1 actual [2 decimals]			Int2		X	X	X	
11	87	t2 actual [2 decimals]			Int2		X	X	X	
12	88	t3 actual [2 decimals]			Int2		X	X	X	
13	84	Pulse input A1					X	X	X	

10.6 32-14-303: C1, Fixed Network, E4 + E10

Wireless M-Bus datagram		YY = 14 ZZZ = 303	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 603 MULTICAL® 803					
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	61	Inlet energy E4					X	X	X	X
2	68	Volume V1					X	X	X	X
3	74	Flow V1 actual					X	X	X	X
4	60	Heat energy E1					X		X	X
5	97	Energy E8					X	X	X	X
6	110	Energy E9					X	X	X	X
7	473	Energy E10					X	X	X	X
8	369	Info bits					X	X	X	X
9	86	t1 actual [2 decimals]			Int2		X	X	X	X
10	87	t2 actual [2 decimals]			Int2		X	X	X	X

10.7 32-14-305: C1, Fixed Network, PDO + max. power year

Wireless M-Bus datagram	YY = 14 ZZZ = 305	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 603 MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	97	Energy E8					X	X	X	
3	110	Energy E9					X	X	X	
4	68	Volume V1					X	X	X	X
5	69	Volume V2					X	X	X	X
6	72	Mass M1					X	X	X	
7	73	Mass M2					X	X	X	
8	369	Info bits					X	X	X	X
9	74	Flow V1 actual					X	X	X	X
10	86	t1 actual [2 decimals]			Int2		X	X	X	X
11	87	t2 actual [2 decimals]			Int2		X	X	X	
12	88	t3 actual [2 decimals]			Int2		X	X	X	
13	128	Power max year	Year Log	1			X	X	X	

11 Wireless M-Bus datagrams for MULTICAL® 803

The following Wired M-Bus Datagrams are applicable for all wired Wireless M-Bus modules used in MULTICAL® 603/803. The datagrams are sorted by where they are used, and then by their YY and ZZZ code

11.1 32-10-401: C1, Drive-by, 9 digit datagram

Wireless M-Bus datagram		YY = 10 ZZZ = 401	Interval: 16 s 25 mW	Walk-by/Drive-by C1, 868 MHz Frame format B	MULTICAL® 803					
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	624	Heat energy E1 extra digit					X		X	
2	623	Cooling energy E3 extra digit						X		
3	623	Cooling energy E3 extra digit				OMS			X	
4	622	Volume V1 extra digit					X	X	X	X
5	86	t1 actual [2 decimals]					X	X	X	X
6	87	t2 actual [2 decimals]					X	X	X	
7	80	Power actual					X	X	X	X
8	74	Flow V1 actual					X	X	X	X
9	369	Info bits					X	X	X	X

11.2 32-10-402: C1, Drive-by, 868 MHz, high resolution datagram

Wireless M-Bus datagram		YY = 10 ZZZ = 402	Interval: 16 s 25 mW	Walk-by/Drive-by C1, 868 MHz Frame format B	MULTICAL® 803					
No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	266	Heat energy E1 high res.					X		X	
3	63	Cooling energy E3						X		
4	63	Cooling energy E3 extra digit				OMS			X	
5	267	Cooling energy E3 high res.						X		
6	267	Cooling energy E3 extra digit				OMS			X	
7	239	Volume V1 high Res.					X	X	X	X
8	86	t1 actual [2 decimals]					X	X	X	X
9	87	t2 actual [2 decimals]					X	X	X	
10	80	Power actual					X	X	X	X
11	74	Flow V1 actual					X	X	X	X
12	369	Info bits					X	X	X	X

11.3 32-11-401: C1, Fixed Network, 9 digit datagram

Wireless M-Bus datagram	YY = 11 ZZZ = 401	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	624	Heat energy E1 extra digit					X		X	
2	623	Cooling energy E3 extra digit						X		
3	623	Cooling energy E3 extra digit				OMS			X	
4	622	Volume V1 extra digit					X	X	X	X
5	86	t1 actual [2 decimals]					X	X	X	X
6	87	t2 actual [2 decimals]					X	X	X	
7	80	Power actual					X	X	X	X
8	74	Flow V1 actual					X	X	X	X
9	369	Info bits					X	X	X	X

11.4 32-11-402: C1, Fixed Network, high resolution datagram

Wireless M-Bus datagram	YY = 11 ZZZ = 402	Interval: 96 s 25 mW	Fixed Network C1, 868 MHz Frame format B	MULTICAL® 803
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No.	Register ID	Register name	Register Origin	St. no.	Data type	Notes	H	C	H/C	V
1	60	Heat energy E1					X		X	
2	266	Heat energy E1 high res.					X		X	
3	63	Cooling energy E3						X		
4	63	Cooling energy E3 extra digit				OMS			X	
5	267	Cooling energy E3 high res.						X		
6	267	Cooling energy E3 extra digit				OMS			X	
7	239	Volume V1 high Res.					X	X	X	X
8	86	t1 actual [2 decimals]					X	X	X	X
9	87	t2 actual [2 decimals]					X	X	X	
10	80	Power actual					X	X	X	X
11	74	Flow V1 actual					X	X	X	X
12	369	Info bits					X	X	X	X

12 Battery lifetime wireless datagrams

For wM-Bus datagrams, different battery life applies depending on the configuration and meter type as well as battery type. Battery life is stated in number of years a meter with the specified datagram can be expected to last. The battery life is calculated on a standard meter with an integration time of 32 seconds and if fast mode is selected, the battery life will be shorter than stated.

Configuration	MULTICAL® 403		MULTICAL® 603	
	2xA-Cell	D-Cell	2xA-Cell	D-Cell
32-10-101	8,0	16,0	9,0	16,0
32-10-102	7,5	15,0	8,5	16,0
32-10-109	7,0	14,5	8,0	16,0
32-10-114	7,0	14,5	8,0	16,0
32-10-126	7,0	15,0	8,5	16,0
32-10-130	7,0	15,0	8,5	16,0
32-11-103	9,5	16,0	11,0	16,0
32-11-104	9,5	16,0	11,0	16,0
32-11-105	9,5	16,0	11,0	16,0
32-11-106	9,5	16,0	11,0	16,0
32-11-107	9,5	16,0	11,0	16,0
32-11-110	9,5	16,0	11,0	16,0
32-11-111	9,5	16,0	11,0	16,0
32-11-112	9,5	16,0	11,0	16,0
32-11-117	9,5	16,0	11,0	16,0
32-11-118	9,5	16,0	11,0	16,0
32-11-119	9,5	16,0	11,0	16,0
32-11-121	9,5	16,0	11,0	16,0
32-11-128	9,5	16,0	11,0	16,0
32-11-211	9,0	16,0	10,5	16,0
32-12-105	6,5	14,0	7,5	16,0
32-12-108	7,0	14,5	8,0	16,0
32-12-110	6,5	13,5	7,5	15,5
32-12-115	7,0	14,5	8,0	16,0
32-12-116	6,5	13,5	7,0	15,5
32-12-118	6,5	13,5	7,5	15,5
32-12-128	6,5	13,5	7,5	15,5
32-12-131	6,5	13,5	7,5	15,5
32-12-205	6,5	13,5	7,5	15,5
32-15-201	10,0	16,0	12,0	16,0
32-16-120	7,0	14,5	8,0	16,0
32-20-201	6,5	13,5	7,0	15,5
32-20-203	6,0	13,0	7,0	15,0
32-20-205	6,5	13,5	7,0	15,5
32-21-201	10,0	16,0	12,0	16,0
32-21-203	19,0	16,0	12,0	16,0
32-22-202	6,5	13,5	7,5	15,5
32-23-202	10,5	16,0	12,0	16,0
32-24-204	5,5	12,5	6,5	14,0
32-11-301			11,0	16,0
32-11-304			11,0	16,0
32-11-309			10,5	16,0
32-11-312			11,0	16,0
32-14-302			11,5	16,0
32-14-303			11,5	16,0
32-14-305			11,5	16,0

13 Meter logger profiles

Below a table shows each available logger profile, including a small description of each logger profile. For details please see the subsequent part of this paragraph which describes each logger profile in detail.

Once a new logger profile is created, it can be made available for both MULTICAL® 403, 603 and 803. However, a specific logger profile will not be identical on the meters, in terms of...

- 1 ... available registers, because MULTICAL® 403 and 603 supports only a subset of registers of that available in MULTICAL® 803.
- 2 ...logger depth, as this varies in the three different meter series and therefore in some cases the logger depth will be extended in e.g. MULTICAL® 603 compared to MULTICAL® 403.
- 3 ...register for date, time, Info code, hour and error hour will always be present in a logger profile

Name	Description	RR
Standard	Our standard profile which is based on the MULTICAL®602 logger profile.	10
NB: Without time averaged temperatures.	10	11
Current values	The standard profile with the addition of current (actual) values in a 15 min. logger	11
	The standard profile with the addition of a 15 min. logger, which contains all of the registers concerning actual values.	13
Ludwig	The standard profile with an extended logger depth for the monthly logger (72 months). Furthermore the registers A1/A2, COP, time averaged temperatures and time averaged analog inputs are added. Lastly the energy registers are added to the daily logger.	12
Madrid	The standard profile with the addition of a 15 min. logger, which contains all of the registers concerning actual values.	13
Peter	The standard profile with an extended logger depth for the hourly logger (1600 hours). Furthermore the registers dE, cE, dV and cV are added.	14
Diagnostic 1	A profile for diagnostic purposes with 1 min. logger containing actual t1, actual t2 and actual flow for V1.	15
Diagnostic 1	A profile for diagnostic purposes with 1 min. logger containing actual t1, actual t2, actual flow for V1 and the analog inputs P1 actual and P2 actual.	16
Kiev	The standard profile with an extended logger depth for the hourly logger (1600 hours). Furthermore the registers dE, cE, dV, cV and COP year / month are added.	18
		17
Information sensitive	A profile with minimum amount of registers – only E1, E3, V1 and INFO	18
Norton	A profile with 1 min logs of actual values + COP	19
Athens	A standard logger profile with addition of actual values, and a twice as large hourly logger as standard logger profile (RR10).	20
Noe	A logger profile with reduced registers. Year depth is reduced to 16. Month, day and hourly log dept is increased to 72, 2190 and 2160	21
Munich	A logger profiles with extended day, month and hour log. Also 15 minute log is available	22
Tartu	A logger profile with maximum 15 min loggers. But with reduced year and monthly (5 and 12) logs. Day and hourly log is completely removed.	23
Wetzlar	A logger with 10 minutes logs of some actual values	24
Doetinchem	The standard profile with temperatures as minute logs and Furthermore the registers dE, cE, dV and cV are added.	25
LinkIQ	A LinkIQ logger profile, special made for the LinkIQ module	50
LinkIQ 2	A extend LinkIQ logger profile with additional registers available	51
LinkIQ 3	A extend LinkIQ logger profile with additional registers available	52
KM RF	A Kamstrup radio (KM RF) logger profile specially made for our legacy radio modules; HC-003-50, HC-003-51 and HC-003-84,HC-003-85.	90

14 MULTICAL® 403 logger profiles

The following meter logger profiles are applicable for MULTICAL® 403.

14.1 Standard (RR 10)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
97	Energy E8	x	x				
110	Energy E9	x	x				
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
1004	Operating hours	x	x				
175	Error hour counter	x	x				

14.2 Current values (RR 11)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	15m	...m
Logger depth		20	36	460	1400	672	-
1003	Date (yy.mm.dd)	x	x	x	x	x	
1002	Time (hh.mm.ss)	x	x	x	x	x	
60	Heat energy E1	x	x	x	x	x	
63	Cooling energy E3	x	x	x	x	x	
97	Energy E8	x	x				
110	Energy E9	x	x				
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x	x	
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
1004	Operating hours	x	x				
175	Error hour counter	x	x				
86	t1 actual [2 decimals]			x	x	x	
87	t2 actual [2 decimals]			x	x	x	
89	t1-t2 diff. temp. [2 decimals]			x	x	x	
74	Flow V1 actual			x	x	x	
80	Power E1/E3 actual			x	x	x	

14.3 Ludwig (RR 12)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	72	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
97	Energy E8	x	x	x			
110	Energy E9	x	x	x			
364	Heat energy A1	x	x	x	x		
365	Heat energy A2	x	x	x	x		
64	Tariff TA2	x	x	x	x		
65	Tariff TA3	x	x	x	x		
362	Tariff TA4	x	x	x	x		
68	Volume V1	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
355	COP year	x					
367	COP month		x				
379	t1 time average day			x			
380	t2 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
1004	Operating hours	x	x				
175	Error hour counter	x	x				

14.4 Madrid (RR 13)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	15m	...m
Logger depth		20	36	460	1400	1344	-
1003	Date (yy.mm.dd)	x	x	x	x	x	
1002	Time (hh.mm.ss)	x	x	x	x	x	
60	Heat energy E1	x	x	x	x	x	
63	Cooling energy E3	x	x	x	x	x	
97	Energy E8	x	x				
110	Energy E9	x	x				
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x	x	
84	Pulse input A1	x	x	x	x	x	
85	Pulse input B1	x	x	x	x	x	
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
355	COP year	x					
367	COP month		x				
379	t1 time average day			x			
380	t2 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
1004	Operating hours	x	x				
175	Error hour counter	x	x				
86	t1 actual [2 decimals]					x	
87	t2 actual [2 decimals]					x	
89	t1-t2 diff. temp. [2 decimals]					x	
74	Flow V1 actual					x	
80	Power E1/E3 actual					x	

14.5 Peter (RR 14)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1600	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
97	Energy E8	x	x	x			
110	Energy E9	x	x	x			
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
1004	Operating hours	x	x				
175	Error hour counter	x	x	x			

14.6 Diagnostic 1 (RR 15)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	1m	...m
Logger depth		20	72	460	-	5760	-
1003	Date (yy.mm.dd)	x	x	x		x	
1002	Time (hh.mm.ss)	x	x	x		x	
60	Heat energy E1	x	x	x			
63	Cooling energy E3	x	x	x			
68	Volume V1	x	x	x			
99/369	Info code	x	x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
1004	Operating hours	x	x				
175	Error hour counter	x	x	x			
86	t1 actual (2 decimals)					x	
87	t2 actual (2 decimals)					x	
74	Flow V1 actual					x	

14.7 Diagnostic 2 (RR 16)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	1m	...m
Logger depth		20	36	460	-	5760	-
1003	Date [yy.mm.dd]	x	x	x		x	
1002	Time [hh.mm.ss]	x	x	x		x	
60	Heat energy E1	x	x	x			
63	Cooling energy E3	x	x	x			
97	Energy E8	x	x	x			
110	Energy E9	x	x	x			
68	Volume V1	x	x	x			
369	Info bits	x	x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
1004	Operating hours	x	x	x			
175	Error hour counter	x	x	x			
86	t1 actual (2 decimals)					x	
87	t2 actual (2 decimals)					x	
74	Flow V1 actual					x	
80	Power E1/E3 actual					x	

14.8 Kiev (RR 17)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1600	-	-
1003	Date (yy.mm.dd)	x	x	x	x		
1002	Time (hh.mm.ss)	x	x	x	x		
60	Heat energy E1	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
97	Energy E8	x	x	x			
110	Energy E9	x	x	x			
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
355	COP Year	x					
367	COP Month		x				
379	t1 time average day			x			
380	t2 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
1004	Operating hours	x	x				
175	Error hour counter	x	x	x			

14.9 Information sensitive (RR 18)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	-	-	-	-
1003	Date [yy.mm.dd]	x	x				
1002	Time [hh.mm.ss]	x	x				
60	Heat energy E1	x					
63	Cooling energy E3	x					
68	Volume V1	x					
99/369	Info code	x					
1004	Operating hours	x	x				
175	Error hour counter	x	x				

14.10 Norton (RR 19)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	1m	...m
Logger depth		20	36	460	1400	3575	-
1003	Date (yy.mm.dd)	x	x	x	x	x	
1002	Time (hh.mm.ss)	x	x	x	x	x	
60	Heat energy E1	x	x	x			
63	Cooling energy E3	x	x	x			
97	Energy E8	x	x	x			
110	Energy E9	x	x	x			
64	Tariff TA2	x	x	x			
65	Tariff TA3	x	x	x			
362	Tariff TA4	x	x	x			
68	Volume V1	x	x	x			
84	Pulse input A1	x	x	x			
85	Pulse input B1	x	x	x			
369	Info bits	x	x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
1004	Operating hours	x	x				
175	Error hour counter	x	x				
86	t1 actual [2 decimals]					x	
87	t2 actual [2 decimals]					x	
89	t1_t2 diff. temp. [2 decimals]					x	
74	Flow V1 actual					x	
80	Power E1/E3 actual					x	
355	COP year	x					
367	COP Month		x				

14.11 Athens (RR 20)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	24	390	1850	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
97	Energy E8	x	x	x	x		
110	Energy E9	x	x	x	x		
68	Volume V1	x	x	x	x		
369	Info bits	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
1004	Operating hours	x	x	x	x		
175	Error hour counter	x	x	x	x		
86	t1 actual [2 decimals]			x	x		
87	t2 actual [2 decimals]			x	x		
89	t1_t2 diff. temp. [2 decimals]			x	x		
74	Flow V1 actual			x	x		
80	Power E1/E3 actual			x	x		

14.12 Noe (RR 21)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		16	72	2190	1080	-	-
1003	Date (yy.mm.dd)	x	x	x	x		
1002	Time (hh.mm.ss)	x	x	x	x		
60	Heat energy E1	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
97	Energy E8	x	x	x	x		
110	Energy E9	x	x	x	x		
68	Volume V1	x	x	x	x		
369	Info bits	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
1004	Operating hours	x	x	x	x		
175	Error hour counter	x	x				

14.13 Munich (RR 22)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	15m	...m
Logger depth		20	72	460	768	1400	-
1003	Date [yy.mm.dd]	x	x	x	x	x	
1002	Time [hh.mm.ss]	x	x	x	x	x	
60	Heat energy E1	x	x	x	x	x	
63	Cooling energy E3	x	x	x	x	x	
97	Energy E8	x	x				
110	Energy E9	x	x				
64	Tariff TA2	x	x	x	x		
65	Tariff TA3	x	x	x	x		
362	Tariff TA4	x	x	x	x		
68	Volume V1	x	x	x	x	x	
84	Pulse input A1	x	x	x	x		
369	Info bits	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
1004	Operating hours	x	x	x	x		
175	Error hour counter	x	x	x	x		
86	t1 actual [2 decimals]				x	x	
87	t2 actual [2 decimals]				x	x	
89	t1_t2 diff. temp. [2 decimals]				x	x	
74	Flow V1 actual				x	x	
80	Power E1/E3 actual				x	x	

14.14 Tartu (RR 23)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	15m	...m
Logger depth		5	12	-	-	2280	-
1003	Date (yy.mm.dd)	x	x			x	
1002	Time (hh.mm.ss)	x	x			x	
60	Heat energy E1	x	x			x	
63	Cooling energy E3	x	x			x	
97	Energy E8	x	x			x	
110	Energy E9	x	x			x	
68	Volume V1	x	x			x	
84	Pulse input A1	x	x			x	
85	Pulse input B1	x	x			x	
369	Info bits	x	x			x	
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
142	Power max month date		x				
143	Power max month		x				
1004	Operating hours	x	x			x	
175	Error hour counter	x	x			x	
86	t1 actual [2 decimals]					x	
87	t2 actual [2 decimals]					x	
74	Flow V1 actual					x	
80	Power E1/E3 actual					x	

14.15 Wetzlar (RR 24)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	10m	...m
Logger depth		20	36	460	1400	2900	-
1003	Date [yy.mm.dd]	x	x	x	x	x	
1002	Time [hh.mm.ss]	x	x	x	x	x	
60	Heat energy E1	x	x	x	x	x	
63	Cooling energy E3	x	x	x	x		
97	Energy E8	x	x				
110	Energy E9	x	x				
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
369	Info bits	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
1004	Operating hours	x	x				
175	Error hour counter	x	x				
86	t1 actual [2 decimals]					x	
87	t2 actual [2 decimals]					x	
74	Flow V1 actual					x	
80	Power E1/E3 actual					x	

14.16 Doetinchem (RR 25)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	1m	...m
Logger depth		20	36	460	1400	2800	-
1003	Date (yy.mm.dd)	x	x	x	x		
1002	Time (hh.mm.ss)	x	x	x	x		
60	Heat energy E1	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
97	Energy E8	x	x	x	x		
110	Energy E9	x	x	x	x		
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
369	Info bits	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
1004	Operating hours	x	x				
175	Error hour counter	x	x	x			
86	t1 actual [2 decimals]					x	
87	t2 actual [2 decimals]					x	

14.17 Kyiv (RR 27)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		0y	0m	0d	60h	...m	...m
Logger depth		20	36	460	1600	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
97	Energy E8	x	x	x			
110	Energy E9	x	x	x			
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
369	Info bits	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
1004	Operating hours	x	x	x	x		
175	Error hour counter	x	x	x	x		
355	COP year	x					
367	COP Month		x				

14.18 LinkIQ (RR 50)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date (yy.mm.dd)	x	x	x	x		
1002	Time (hh.mm.ss)	x	x	x	x		
60	Heat energy E1		x	x	x		
63	Cooling energy E3		x	x	x		
97	Energy E8		x	x	x		
110	Energy E9		x	x	x		
364	Heat energy A1		x				
365	Heat energy A2		x				
64	Tariff TA2		x				
65	Tariff TA3		x				
362	Tariff TA4		x				
68	Volume V1		x	x	x		
84	Pulse input A1		x				
85	Pulse input B1		x				
369	Info bits		x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
127	Power max year date	x					
128	Power max year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
142	Power max month date		x				
143	Power max month		x				
1004	Operating hours		x	x			
175	Error hour counter		x	x			
86	t1 actual [2 decimals]		x				
87	t2 actual [2 decimals]		x				

14.19 LinkIQ 2 (RR 51)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1		x	x	x		
63	Cooling energy E3		x	x	x		
97	Energy E8		x	x	x		
110	Energy E9		x	x	x		
364	Heat energy A1		x				
365	Heat energy A2		x				
64	Tariff TA2		x				
65	Tariff TA3		x				
362	Tariff TA4		x				
68	Volume V1		x	x	x		
84	Pulse input A1		x				
85	Pulse input B1		x				
369	Info bits		x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
379	t1 time average day			x			
380	t2 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
1004	Operating hours		x	x			
175	Error hour counter		x	x			
86	t1 actual [2 decimals]		x		x		
87	t2 actual [2 decimals]		x		x		
74	Flow V1 actual				x		

14.20 LinkIQ 3 (RR 52)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date (yy.mm.dd)	x	x	x	x		
1002	Time (hh.mm.ss)	x	x	x	x		
60	Heat energy E1		x	x	x		
63	Cooling energy E3		x	x	x		
97	Energy E8		x	x	x		
110	Energy E9		x	x	x		
364	Heat energy A1		x				
365	Heat energy A2		x				
64	Tariff TA2		x				
65	Tariff TA3		x				
362	Tariff TA4		x				
68	Volume V1		x	x	x		
84	Pulse input A1		x				
85	Pulse input B1		x				
369	Info bits		x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
379	t1 time average day			x			
380	t2 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
1004	Operating hours		x	x			
175	Error hour counter		x	x			
86	t1 actual [2 decimals]		x		x		
87	t2 actual [2 decimals]		x		x		
74	Flow V1 actual				x		
80	Power E1/E3 actual	x	x	x	x		

14.21 KM RF (RR 90)

MULTICAL® 403							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
97	Energy E8	x	x		x		
110	Energy E9	x	x		x		
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
1004	Operating hours	x	x		x		
175	Error hour counter	x	x		x		
86	t1 actual [2 decimals]				x		
87	t2 actual [2 decimals]				x		
89	t1-t2 diff. temp. [2 decimals]				x		
74	Flow V1 actual				x		
80	Power E1/E3 actual				x		

15 MULTICAL® 603 logger profiles

The following meter logger profiles are applicable for MULTICAL® 603.

15.1 Standard (RR 10)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date (yy.mm.dd)	x	x	x	x		
1002	Time (hh.mm.ss)	x	x	x	x		
60	Heat energy E1	x	x	x	x		
94	Heat energy E2	x	x				
63	Cooling energy E3	x	x	x	x		
61	Inlet energy E4	x	x				
62	Outlet energy E5	x	x				
95	Tap water energy E6	x	x				
96	Tap water energy E7	x	x				
97	Energy E8	x	x				
110	Energy E9	x	x				
473	Energy E10	x	x				
474	Energy E11	x	x				
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
224	Pulse input A2	x	x	x	x		
225	Pulse input B2	x	x	x	x		
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date (yy.mm.dd)	x	x	x	x		
1002	Time (hh.mm.ss)	x	x	x	x		
1004	Operating hours	x	x				
175	Error hour counter	x	x				

15.2 Current values (RR 11)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	15m	...m
Logger depth		20	36	460	1400	672	-
1003	Date [yy.mm.dd]	x	x	x	x	x	
1002	Time [hh.mm.ss]	x	x	x	x	x	
60	Heat energy E1	x	x	x	x	x	
94	Heat energy E2	x	x				
63	Cooling energy E3	x	x	x	x	x	
61	Inlet energy E4	x	x				
62	Outlet energy E5	x	x				
95	Tap water energy E6	x	x				
96	Tap water energy E7	x	x				
97	Energy E8	x	x				
110	Energy E9	x	x				
473	Energy E10	x	x				
474	Energy E11	x	x				
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x	x	
69	Volume V2	x	x	x	x	x	
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
224	Pulse input A2	x	x	x	x		
225	Pulse input B2	x	x	x	x		
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
477	t3 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	15m	...m
Logger depth		20	36	460	1400	672	-
1003	Date [yy.mm.dd]	x	x	x	x	x	
1002	Time [hh.mm.ss]	x	x	x	x	x	
478	t3 time average hour				x		
505	P1 average day			x			
506	P2 average day			x			
507	P1 average hour				x		
508	P2 average hour				x		
1004	Operating hours	x	x				
175	Error hour counter	x	x				
86	t1 actual [2 decimals]			x	x	x	
87	t2 actual [2 decimals]			x	x	x	
88	t3 actual [2 decimals]			x	x	x	
122	t4 actual [2 decimals]			x	x	x	
89	t1-t2 diff. temp. [2 decimals]			x	x	x	
74	Flow V1 actual			x	x	x	
75	Flow V2 actual			x	x	x	
80	Power E1/E3 actual			x	x	x	
91	P1 actual			x	x	x	
92	P2 actual			x	x	x	

15.3 Ludwig (RR 12)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	72	460	1400	-	-
1003	Date (yy.mm.dd)	x	x	x	x		
1002	Time (hh.mm.ss)	x	x	x	x		
60	Heat energy E1	x	x	x	x		
94	Heat energy E2	x	x	x			
63	Cooling energy E3	x	x	x	x		
61	Inlet energy E4	x	x	x			
62	Outlet energy E5	x	x	x			
95	Tap water energy E6	x	x	x			
96	Tap water energy E7	x	x	x			
97	Energy E8	x	x	x			
110	Energy E9	x	x	x			
473	Energy E10	x	x	x			
474	Energy E11	x	x	x			
364	Heat energy A1	x	x	x	x		
365	Heat energy A2	x	x	x	x		
64	Tariff TA2	x	x	x	x		
65	Tariff TA3	x	x	x	x		
362	Tariff TA4	x	x	x	x		
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
224	Pulse input A2	x	x	x	x		
225	Pulse input B2	x	x	x	x		
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
355	COP year	x					
367	COP month		x				
379	t1 time average day			x			

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	72	460	1400	-	-
1003	Date (yy.mm.dd)	x	x	x	x		
1002	Time (hh.mm.ss)	x	x	x	x		
380	t2 time average day			x			
477	t3 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
478	t3 time average hour				x		
505	P1 average day			x			
506	P2 average day			x			
507	P1 average hour				x		
508	P2 average hour				x		
1004	Operating hours	x	x				
175	Error hour counter	x	x				

15.4 Madrid (RR 13)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	15m	...m
Logger depth		20	36	460	1400	1344	-
1003	Date [yy.mm.dd]	x	x	x	x	x	
1002	Time [hh.mm.ss]	x	x	x	x	x	
60	Heat energy E1	x	x	x	x	x	
94	Heat energy E2	x	x				
63	Cooling energy E3	x	x	x	x	x	
61	Inlet energy E4	x	x				
62	Outlet energy E5	x	x				
95	Tap water energy E6	x	x				
96	Tap water energy E7	x	x				
97	Energy E8	x	x				
110	Energy E9	x	x				
473	Energy E10	x	x				
474	Energy E11	x	x				
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x	x	
69	Volume V2	x	x	x	x	x	
84	Pulse input A1	x	x	x	x	x	
85	Pulse input B1	x	x	x	x	x	
224	Pulse input A2	x	x	x	x	x	
225	Pulse input B2	x	x	x	x	x	
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
355	COP year	x					
367	COP month		x				
379	t1 time average day			x			
380	t2 time average day			x			
477	t3 time average day			x			

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	15m	...m
Logger depth		20	36	460	1400	1344	-
1003	Date [yy.mm.dd]	x	x	x	x	x	
1002	Time [hh.mm.ss]	x	x	x	x	x	
381	t1 time average hour				x		
382	t2 time average hour				x		
478	t3 time average hour				x		
505	P1 average day			x			
506	P2 average day			x			
507	P1 average hour				x		
508	P2 average hour				x		
1004	Operating hours	x	x				
175	Error hour counter	x	x				
86	t1 actual [2 decimals]					x	
87	t2 actual [2 decimals]					x	
88	t3 actual [2 decimals]					x	
122	t4 actual [2 decimals]					x	
89	t1-t2 diff. temp. [2 decimals]					x	
74	Flow V1 actual					x	
75	Flow V2 actual					x	
80	Power E1/E3 actual					x	
91	P1 actual					x	
92	P2 actual					x	

15.5 Peter (RR 14)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1600	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1	x	x	x	x		
94	Heat energy E2	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
61	Inlet energy E4	x	x	x	x		
62	Outlet energy E5	x	x	x	x		
95	Tap water energy E6	x	x	x	x		
96	Tap water energy E7	x	x	x	x		
97	Energy E8	x	x	x			
110	Energy E9	x	x	x			
473	Energy E10	x	x	x			
474	Energy E11	x	x	x			
178	Differential energy dE	x	x	x	x		
179	Control energy cE	x	x	x	x		
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
180	Differential volume dV	x	x	x	x		
181	Control volume cV	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
224	Pulse input A2	x	x	x	x		
225	Pulse input B2	x	x	x	x		
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
379	t1 time average day			x			

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1600	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
380	t2 time average day			x			
477	t3 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
478	t3 time average hour				x		
505	P1 average day			x			
506	P2 average day			x			
507	P1 average hour				x		
508	P2 average hour				x		
1004	Operating hours	x	x				
175	Error hour counter	x	x	x			

15.6 Diagnostic 1 (RR 15)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	1m	...m
Logger depth		20	72	460	-	12960	-
1003	Date [yy.mm.dd]	x	x	x		x	
1002	Time [hh.mm.ss]	x	x	x		x	
60	Heat energy E1	x	x	x			
63	Cooling energy E3	x	x	x			
68	Volume V1	x	x	x			
72	Mass M1	x	x	x			
99/369	Info code	x	x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
1004	Operating hours	x	x				
175	Error hour counter	x	x	x			
86	t1 actual [2 decimals]					x	
87	t2 actual [2 decimals]					x	
74	Flow V1 actual					x	

15.7 Diagnostic 2 (RR 16)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	1m	...m
Logger depth		20	36	460	-	6480	-
1003	Date (yy.mm.dd)	x	x	x		x	
1002	Time (hh.mm.ss)	x	x	x		x	
60	Heat energy E1	x	x	x			
63	Cooling energy E3	x	x	x			
97	Energy E8	x	x	x			
110	Energy E9	x	x	x			
473	Energy E10	x	x	x			
68	Volume V1	x	x	x			
69	Volume V2	x	x	x			
72	Mass M1	x	x	x			
73	Mass M2	x	x	x			
369	Info bits	x	x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
505	P1 average day			x			
506	P2 average day			x			
1004	Operating hours	x	x	x			
175	Error hour counter	x	x	x			
86	t1 actual [2 decimals]					x	
87	t2 actual [2 decimals]					x	
74	Flow V1 actual					x	
75	Flow V2 actual					x	
80	Power E1/E3 actual					x	
91	P1 actual					x	
92	P2 actual					x	

15.8 Kiev (RR 17)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1600	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1	x	x	x	x		
94	Heat energy E2	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
61	Inlet energy E4	x	x	x	x		
62	Outlet energy E5	x	x	x	x		
95	Tap water energy E6	x	x	x	x		
96	Tap water energy E7	x	x	x	x		
97	Energy E8	x	x	x			
110	Energy E9	x	x	x			
473	Energy E10	x	x	x			
474	Energy E11	x	x	x			
178	Differential energy dE	x	x	x	x		
179	Control energy cE	x	x	x	x		
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
180	Differential volume dV	x	x	x	x		
181	Control volume cV	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
224	Pulse input A2	x	x	x	x		
225	Pulse input B2	x	x	x	x		
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
355	COP Year	x					

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1600	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
367	COP Month		x				
379	t1 time average day			x			
380	t2 time average day			x			
477	t3 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
478	t3 time average hour				x		
505	P1 average day			x			
506	P2 average day			x			
507	P1 average hour				x		
508	P2 average hour				x		
1004	Operating hours	x	x				
175	Error hour counter	x	x	x			

15.9 Information sensitive (RR 18)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	-	-	-	-
1003	Date (yy.mm.dd)	x	x				
1002	Time (hh.mm.ss)	x	x				
60	Heat energy E1	x					
63	Cooling energy E3	x					
68	Volume V1	x					
99/369	Info code	x					
1004	Operating hours	x	x				
175	Error hour counter	x	x				

15.10 Norton (RR 19)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	1m	...m
Logger depth		20	36	460	1400	4320	-
1003	Date [yy.mm.dd]	x	x	x	x	x	
1002	Time [hh.mm.ss]	x	x	x	x	x	
60	Heat energy E1	x	x	x			
63	Cooling energy E3	x	x	x			
97	Energy E8	x	x	x			
110	Energy E9	x	x	x			
474	Energy E11	x	x	x			
64	Tariff TA2	x	x	x			
65	Tariff TA3	x	x	x			
362	Tariff TA4	x	x	x			
68	Volume V1	x	x	x			
69	Volume V2	x	x	x			
84	Pulse input A1	x	x	x			
85	Pulse input B1	x	x	x			
224	Pulse input A2	x	x	x			
225	Pulse input B2	x	x	x			
369	Info bits	x	x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
355	COP year	x					
367	COP Month		x				
379	t1 time average day			x			
380	t2 time average day			x			
477	t3 time average day			x			
1004	Operating hours	x	x				
175	Error hour counter	x	x				
86	t1 actual [2 decimals]					x	
87	t2 actual [2 decimals]					x	
88	t3 actual [2 decimals]					x	
122	t4 actual [2 decimals]					x	
89	t1_t2 diff. temp. [2 decimals]					x	
74	Flow V1 actual					x	

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	1m	...m
Logger depth		20	36	460	1400	4320	-
1003	Date [yy.mm.dd]	x	x	x	x	x	
1002	Time [hh.mm.ss]	x	x	x	x	x	
75	Flow V2 actual						x
80	Power E1/E3 actual						x
91	P1 actual						x
92	P2 actual						x

15.11 Athens (RR 20)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	..m	...m
Logger depth		20	24	390	2976	-	-
1003	Date (yy.mm.dd)	x	x	x	x		
1002	Time (hh.mm.ss)	x	x	x	x		
60	Heat energy E1	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
97	Energy E8	x	x	x	x		
110	Energy E9	x	x	x	x		
473	Energy E10	x	x	x	x		
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
72	Mass M1	x	x				
73	Mass M2	x	x				
369	Info bits	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
1004	Operating hours	x	x	x	x		
175	Error hour counter	x	x	x	x		
86	t1 actual [2 decimals]			x	x		
87	t2 actual [2 decimals]			x	x		
88	t3 actual [2 decimals]			x	x		
89	t1_t2 diff. temp. [2 decimals]			x	x		
74	Flow V1 actual			x	x		
75	Flow V2 actual			x	x		
80	Power E1/E3 actual			x	x		

15.12 Noe (RR 21)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	..m	..m
Logger depth		16	72	2190	2160	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
97	Energy E8	x	x	x	x		
110	Energy E9	x	x	x	x		
473	Energy E10	x	x	x	x		
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
369	Info bits	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
1004	Operating hours	x	x	x	x		
175	Error hour counter	x	x				

15.13 Munich (RR 22)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	15m	...m
Logger depth		20	72	460	2000	2000	-
1003	Date (yy.mm.dd)	x	x	x	x	x	
1002	Time (hh.mm.ss)	x	x	x	x	x	
60	Heat energy E1	x	x	x	x	x	
63	Cooling energy E3	x	x	x	x	x	
97	Energy E8	x	x				
110	Energy E9	x	x				
64	Tariff TA2	x	x	x	x		
65	Tariff TA3	x	x	x	x		
362	Tariff TA4	x	x	x	x		
68	Volume V1	x	x	x	x	x	
84	Pulse input A1	x	x	x	x		
224	Pulse input A2	x	x	x	x		
369	Info bits	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
1004	Operating hours	x	x	x	x		
175	Error hour counter	x	x	x	x		
86	t1 actual [2 decimals]				x	x	
87	t2 actual [2 decimals]				x	x	
89	t1_t2 diff. temp. [2 decimals]				x	x	
74	Flow V1 actual				x	x	
80	Power E1/E3 actual				x	x	

15.14 Tartu (RR 23)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	15m	...m
Logger depth		5	12	-	-	3220	-
1003	Date [yy.mm.dd]	x	x			x	
1002	Time [hh.mm.ss]	x	x			x	
60	Heat energy E1	x	x			x	
63	Cooling energy E3	x	x			x	
97	Energy E8	x	x			x	
110	Energy E9	x	x			x	
68	Volume V1	x	x			x	
69	Volume V2	x	x			x	
84	Pulse input A1	x	x			x	
85	Pulse input B1	x	x			x	
224	Pulse input A2	x	x				
225	Pulse input B2	x	x				
369	Info bits	x	x			x	
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
142	Power max month date		x				
143	Power max month		x				
1004	Operating hours	x	x			x	
175	Error hour counter	x	x			x	
86	t1 actual [2 decimals]					x	
87	t2 actual [2 decimals]					x	
88	t3 actual [2 decimals]					x	
74	Flow V1 actual					x	
75	Flow V2 actual					x	
80	Power E1/E3 actual					x	
91	P1 actual					x	
92	P2 actual					x	

15.15 Wetzlar (RR 24)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	10m	...m
Logger depth		20	36	460	1400	6000	-
1003	Date [yy.mm.dd]	x	x	x	x	x	
1002	Time [hh.mm.ss]	x	x	x	x	x	
60	Heat energy E1	x	x	x	x	x	
94	Heat energy E2	x	x				
63	Cooling energy E3	x	x	x	x		
61	Inlet energy E4	x	x				
62	Outlet energy E5	x	x				
95	Tap water energy E6	x	x				
96	Tap water energy E7	x	x				
97	Energy E8	x	x				
110	Energy E9	x	x				
473	Energy E10	x	x				
474	Energy E11	x	x				
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
224	Pulse input A2	x	x	x	x		
225	Pulse input B2	x	x	x	x		
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
369	Info bits	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
1004	Operating hours	x	x				
175	Error hour counter	x	x				
86	t1 actual [2 decimals]					x	
87	t2 actual [2 decimals]					x	
74	Flow V1 actual					x	

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	10m	...m
Logger depth		20	36	460	1400	6000	-
1003	Date [yy.mm.dd]	x	x	x	x	x	
1002	Time [hh.mm.ss]	x	x	x	x	x	
80	Power E1/E3 actual					x	

15.16 Doetinchem (RR 25)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	1m	...m
Logger depth		20	36	460	1400	460	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1	x	x	x	x		
94	Heat energy E2	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
61	Inlet energy E4	x	x	x	x		
62	Outlet energy E5	x	x	x	x		
95	Tap water energy E6	x	x	x	x		
96	Tap water energy E7	x	x	x	x		
97	Energy E8	x	x	x	x		
110	Energy E9	x	x	x	x		
473	Energy E10	x	x	x	x		
474	Energy E11	x	x	x	x		
178	Differential energy dE	x	x	x	x		
179	Control energy cE	x	x	x	x		
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
180	Differential volume dV	x	x	x	x		
181	Control volume cV	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
224	Pulse input A2	x	x	x	x		
225	Pulse input B2	x	x	x	x		
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
369	Info bits	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
379	t1 time average day			x			

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	1m	...m
Logger depth		20	36	460	1400	460	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
380	t2 time average day			x			
477	t3 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
478	t3 time average hour				x		
505	P1 average day			x			
506	P2 average day			x			
507	P1 average hour				x		
508	P2 average hour				x		
1004	Operating hours	x	x				
175	Error hour counter	x	x	x			
86	t1 actual [2 decimals]					x	
87	t2 actual [2 decimals]					x	
88	t3 actual [2 decimals]					x	
122	t4 actual [2 decimals]					x	

15.17 Kyiv (RR 27)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		0y	0m	0d	60h	...m	...m
Logger depth		20	36	460	1600	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1	x	x	x	x		
94	Heat energy E2	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
61	Inlet energy E4	x	x	x	x		
62	Outlet energy E5	x	x	x	x		
95	Tap water energy E6	x	x	x	x		
96	Tap water energy E7	x	x	x	x		
97	Energy E8	x	x	x			
110	Energy E9	x	x	x			
473	Energy E10	x	x	x			
474	Energy E11	x	x	x			
178	Differential energy dE	x	x	x	x		
179	Control energy cE	x	x	x	x		
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
180	Differential volume dV	x	x	x	x		
181	Control volume cV	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
224	Pulse input A2	x	x	x	x		
225	Pulse input B2	x	x	x	x		
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
369	Info bits	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
355	COP year	x					

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		0y	0m	0d	60h	...m	...m
Logger depth		20	36	460	1600	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
367	COP Month		x				
379	t1 time average day			x			
380	t2 time average day			x			
477	t3 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
478	t3 time average hour				x		
505	P1 average day			x			
506	P2 average day			x			
507	P1 average hour				x		
508	P2 average hour				x		
1004	Operating hours	x	x	x	x		
175	Error hour counter	x	x	x	x		

15.18 LinkIQ (RR 50)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1		x	x	x		
94	Heat energy E2		x	x	x		
63	Cooling energy E3		x	x	x		
97	Energy E8		x	x	x		
110	Energy E9		x	x	x		
473	Energy E10		x				
474	Energy E11		x				
364	Heat energy A1		x				
365	Heat energy A2		x				
64	Tariff TA2		x				
65	Tariff TA3		x				
362	Tariff TA4		x				
68	Volume V1		x	x	x		
69	Volume V2		x				
84	Pulse input A1		x				
85	Pulse input B1		x				
224	Pulse input A2		x				
225	Pulse input B2		x				
72	Mass M1		x				
73	Mass M2		x				
369	Info bits		x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
127	Power max year date	x					
128	Power max year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
142	Power max month date		x				
143	Power max month		x				
1004	Operating hours		x	x			
175	Error hour counter		x	x			
86	t1 actual [2 decimals]		x				
87	t2 actual [2 decimals]		x				
88	t3 actual [2 decimals]		x				
122	t4 actual [2 decimals]		x				

15.19 LinkIQ 2 (RR 51)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date (yy.mm.dd)	x	x	x	x		
1002	Time (hh.mm.ss)	x	x	x	x		
60	Heat energy E1		x	x	x		
94	Heat energy E2		x	x	x		
63	Cooling energy E3		x	x	x		
97	Energy E8		x	x	x		
110	Energy E9		x	x	x		
473	Energy E10		x				
474	Energy E11		x				
364	Heat energy A1		x				
365	Heat energy A2		x				
64	Tariff TA2		x				
65	Tariff TA3		x				
362	Tariff TA4		x				
68	Volume V1		x	x	x		
69	Volume V2		x				
84	Pulse input A1		x				
85	Pulse input B1		x				
224	Pulse input A2		x				
225	Pulse input B2		x				
72	Mass M1		x				
73	Mass M2		x				
369	Info bits		x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
379	t1 time average day			x			
380	t2 time average day			x			
477	t3 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
478	t3 time average hour				x		
1004	Operating hours		x	x			
175	Error hour counter		x	x			
86	t1 actual (2 decimals)		x		x		
87	t2 actual (2 decimals)		x		x		
88	t3 actual (2 decimals)		x				

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date (yy.mm.dd)	x	x	x	x		
1002	Time (hh.mm.ss)	x	x	x	x		
122	t4 actual (2 decimals)		x				
74	Flow V1 actual				x		

15.20 LinkIQ 3 (RR 52)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1		x	x	x		
94	Heat energy E2		x	x	x		
63	Cooling energy E3		x	x	x		
97	Energy E8		x	x	x		
110	Energy E9		x	x	x		
473	Energy E10		x				
474	Energy E11		x				
364	Heat energy A1		x				
365	Heat energy A2		x				
64	Tariff TA2		x				
65	Tariff TA3		x				
362	Tariff TA4		x				
68	Volume V1		x	x	x		
69	Volume V2		x				
84	Pulse input A1		x				
85	Pulse input B1		x				
224	Pulse input A2		x				
225	Pulse input B2		x				
72	Mass M1		x				
73	Mass M2		x				
369	Info bits		x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
379	t1 time average day			x			
380	t2 time average day			x			
477	t3 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
478	t3 time average hour				x		
1004	Operating hours		x	x			
175	Error hour counter		x	x			
86	t1 actual [2 decimals]		x		x		
87	t2 actual [2 decimals]		x		x		
88	t3 actual [2 decimals]		x				

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
122	t4 actual [2 decimals]		x				
74	Flow V1 actual				x		
80	Power E1/E3 actual	x	x	x	x		

15.21 LinkIQ PDO (RR 53)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1		x	x	x		
94	Heat energy E2		x	x	x		
63	Cooling energy E3		x	x	x		
97	Energy E8		x	x	x		
110	Energy E9		x	x	x		
473	Energy E10		x	x	x		
474	Energy E11		x	x	x		
364	Heat energy A1		x				
365	Heat energy A2		x				
64	Tariff TA2		x				
65	Tariff TA3		x				
362	Tariff TA4		x				
68	Volume V1		x	x	x		
69	Volume V2		x	x	x		
84	Pulse input A1		x				
85	Pulse input B1		x				
224	Pulse input A2		x				
225	Pulse input B2		x				
72	Mass M1		x	x	x		
73	Mass M2		x	x	x		
369	Info bits		x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
379	t1 time average day			x			
380	t2 time average day			x			
477	t3 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
478	t3 time average hour				x		
1004	Operating hours		x	x			
175	Error hour counter		x	x			
86	t1 actual [2 decimals]		x	x	x		
87	t2 actual [2 decimals]		x	x	x		
88	t3 actual [2 decimals]		x	x	x		

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
122	t4 actual [2 decimals]		x	x	x		
74	Flow V1 actual		x	x	x		
80	Power E1/E3 actual		x	x	x		

15.22 KM RF (RR 90)

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1	x	x	x	x		
94	Heat energy E2	x	x		x		
63	Cooling energy E3	x	x	x	x		
61	Inlet energy E4	x	x		x		
62	Outlet energy E5	x	x		x		
95	Tap water energy E6	x	x		x		
96	Tap water energy E7	x	x		x		
97	Energy E8	x	x		x		
110	Energy E9	x	x		x		
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
1004	Operating hours	x	x		x		
175	Error hour counter	x	x		x		
86	t1 actual [2 decimals]				x		
87	t2 actual [2 decimals]				x		
88	t3 actual [2 decimals]				x		
122	t4 actual [2 decimals]				x		
89	t1-t2 diff. temp. [2 decimals]				x		
74	Flow V1 actual				x		
75	Flow V2 actual				x		

MULTICAL® 603							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
80	Power E1/E3 actual				x		
91	P1 actual				x		
92	P2 actual				x		

16 MULTICAL® 803 logger profiles

The following meter logger profiles are applicable for MULTICAL® 803.

16.1 Standard (RR 10)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date (yy.mm.dd)	x	x	x	x		
1002	Time (hh.mm.ss)	x	x	x	x		
60	Heat energy E1	x	x	x	x		
94	Heat energy E2	x	x				
63	Cooling energy E3	x	x	x	x		
61	Inlet energy E4	x	x				
62	Outlet energy E5	x	x				
95	Tap water energy E6	x	x				
96	Tap water energy E7	x	x				
97	Energy E8	x	x				
110	Energy E9	x	x				
473	Energy E10	x	x				
474	Energy E11	x	x				
611	Energy E12	x	x				
612	Energy E13	x	x				
613	Energy E14	x	x				
614	Energy E15	x	x				
615	Energy E16	x	x				
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
224	Pulse input A2	x	x	x	x		
225	Pulse input B2	x	x	x	x		
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
616	Mass M3	x	x	x	x		
617	Mass M4	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date (yy.mm.dd)	x	x	x	x		
1002	Time (hh.mm.ss)	x	x	x	x		
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
599	t1 max year date/time	x					
603	t1 max year	x					
601	t1 min year date/time	x					
605	t1 min year	x					
591	t2 max year date/time	x					
595	t2 max year	x					
593	t2 min year date/time	x					
597	t2 min year	x					
598	t1 max month date/time		x				
602	t1 max month		x				
600	t1 min month date/time		x				
604	t1 min month		x				
590	t2 max month date/time		x				
594	t2 max month		x				
592	t2 min month date/time		x				
596	t2 min month		x				
1004	Operating hours	x	x				
175	Error hour counter	x	x				

16.2 Current values (RR 11)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	15m	...m
Logger depth		20	36	460	1400	672	-
1003	Date [yy.mm.dd]	x	x	x	x	x	
1002	Time [hh.mm.ss]	x	x	x	x	x	
60	Heat energy E1	x	x	x	x	x	
94	Heat energy E2	x	x				
63	Cooling energy E3	x	x	x	x	x	
61	Inlet energy E4	x	x				
62	Outlet energy E5	x	x				
95	Tap water energy E6	x	x				
96	Tap water energy E7	x	x				
97	Energy E8	x	x				
110	Energy E9	x	x				
473	Energy E10	x	x				
474	Energy E11	x	x				
611	Energy E12	x	x				
612	Energy E13	x	x				
613	Energy E14	x	x				
614	Energy E15	x	x				
615	Energy E16	x	x				
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x	x	
69	Volume V2	x	x	x	x	x	
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
224	Pulse input A2	x	x	x	x		
225	Pulse input B2	x	x	x	x		
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
616	Mass M3	x	x	x	x		
617	Mass M4	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	15m	...m
Logger depth		20	36	460	1400	672	-
1003	Date [yy.mm.dd]	x	x	x	x	x	
1002	Time [hh.mm.ss]	x	x	x	x	x	
144	Power Min month date		x				
145	Power Min month		x				
599	t1 max year date/time	x					
603	t1 max year	x					
601	t1 min year date/time	x					
605	t1 min year	x					
591	t2 max year date/time	x					
595	t2 max year	x					
593	t2 min year date/time	x					
597	t2 min year	x					
598	t1 max month date/time		x				
602	t1 max month		x				
600	t1 min month date/time		x				
604	t1 min month		x				
590	t2 max month date/time		x				
594	t2 max month		x				
592	t2 min month date/time		x				
596	t2 min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
477	t3 time average day			x			
635	t4 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
478	t3 time average hour				x		
636	t4 time average hour				x		
505	P1 average day			x			
506	P2 average day			x			
507	P1 average hour				x		
508	P2 average hour				x		
1004	Operating hours	x	x				
175	Error hour counter	x	x				
86	t1 actual [2 decimals]			x	x	x	
87	t2 actual [2 decimals]			x	x	x	
88	t3 actual [2 decimals]			x	x	x	
122	t4 actual [2 decimals]			x	x	x	
89	t1-t2 diff. temp. [2 decimals]			x	x	x	
74	Flow V1 actual			x	x	x	
75	Flow V2 actual			x	x	x	
80	Power E1/E3 actual			x	x	x	
91	P1 actual			x	x	x	
92	P2 actual			x	x	x	

16.3 Ludwig (RR 12)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	72	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1	x	x	x	x		
94	Heat energy E2	x	x	x			
63	Cooling energy E3	x	x	x	x		
61	Inlet energy E4	x	x	x			
62	Outlet energy E5	x	x	x			
95	Tap water energy E6	x	x	x			
96	Tap water energy E7	x	x	x			
97	Energy E8	x	x	x			
110	Energy E9	x	x	x			
473	Energy E10	x	x	x			
474	Energy E11	x	x	x			
611	Energy E12	x	x	x			
612	Energy E13	x	x	x			
613	Energy E14	x	x	x			
614	Energy E15	x	x	x			
615	Energy E16	x	x	x			
364	Heat energy A1	x	x	x	x		
365	Heat energy A2	x	x	x	x		
64	Tariff TA2	x	x	x	x		
65	Tariff TA3	x	x	x	x		
362	Tariff TA4	x	x	x	x		
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
224	Pulse input A2	x	x	x	x		
225	Pulse input B2	x	x	x	x		
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
616	Mass M3	x	x	x	x		
617	Mass M4	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	72	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
599	t1 max year date/time	x					
603	t1 max year	x					
601	t1 min year date/time	x					
605	t1 min year	x					
591	t2 max year date/time	x					
595	t2 max year	x					
593	t2 min year date/time	x					
597	t2 min year	x					
598	t1 max month date/time		x				
602	t1 max month		x				
600	t1 min month date/time		x				
604	t1 min month		x				
590	t2 max month date/time		x				
594	t2 max month		x				
592	t2 min month date/time		x				
596	t2 min month		x				
355	COP year	x					
367	COP month		x				
379	t1 time average day			x			
380	t2 time average day			x			
477	t3 time average day			x			
635	t4 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
478	t3 time average hour				x		
636	t4 time average hour				x		
505	P1 average day			x			
506	P2 average day			x			
507	P1 average hour				x		
508	P2 average hour				x		
1004	Operating hours	x	x				
175	Error hour counter	x	x				

16.4 Madrid (RR 13)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	15m	...m
Logger depth		20	36	460	1400	1344	-
1003	Date [yy.mm.dd]	x	x	x	x	x	
1002	Time [hh.mm.ss]	x	x	x	x	x	
60	Heat energy E1	x	x	x	x	x	
94	Heat energy E2	x	x				
63	Cooling energy E3	x	x	x	x	x	
61	Inlet energy E4	x	x				
62	Outlet energy E5	x	x				
95	Tap water energy E6	x	x				
96	Tap water energy E7	x	x				
97	Energy E8	x	x				
110	Energy E9	x	x				
473	Energy E10	x	x				
474	Energy E11	x	x				
611	Energy E12	x	x				
612	Energy E13	x	x				
613	Energy E14	x	x				
614	Energy E15	x	x				
615	Energy E16	x	x				
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x	x	
69	Volume V2	x	x	x	x	x	
84	Pulse input A1	x	x	x	x	x	
85	Pulse input B1	x	x	x	x	x	
224	Pulse input A2	x	x	x	x	x	
225	Pulse input B2	x	x	x	x	x	
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
616	Mass M3	x	x	x	x		
617	Mass M4	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	15m	...m
Logger depth		20	36	460	1400	1344	-
1003	Date [yy.mm.dd]	x	x	x	x	x	
1002	Time [hh.mm.ss]	x	x	x	x	x	
144	Power Min month date		x				
145	Power Min month		x				
599	t1 max year date/time	x					
603	t1 max year	x					
601	t1 min year date/time	x					
605	t1 min year	x					
591	t2 max year date/time	x					
595	t2 max year	x					
593	t2 min year date/time	x					
597	t2 min year	x					
598	t1 max month date/time		x				
602	t1 max month		x				
600	t1 min month date/time		x				
604	t1 min month		x				
590	t2 max month date/time		x				
594	t2 max month		x				
592	t2 min month date/time		x				
596	t2 min month		x				
355	COP year	x					
367	COP month		x				
379	t1 time average day			x			
380	t2 time average day			x			
477	t3 time average day			x			
635	t4 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
478	t3 time average hour				x		
636	t4 time average hour				x		
505	P1 average day			x			
506	P2 average day			x			
507	P1 average hour				x		
508	P2 average hour				x		
1004	Operating hours	x	x				
175	Error hour counter	x	x				
86	t1 actual [2 decimals]						x
87	t2 actual [2 decimals]						x
88	t3 actual [2 decimals]						x
122	t4 actual [2 decimals]						x
89	t1_t2 diff. temp. [2 decimals]						x
74	Flow V1 actual						x
75	Flow V2 actual						x
80	Power E1/E3 actual						x
91	P1 actual						x
92	P2 actual						x

16.5 Peter (RR 14)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1600	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1	x	x	x	x		
94	Heat energy E2	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
61	Inlet energy E4	x	x	x	x		
62	Outlet energy E5	x	x	x	x		
95	Tap water energy E6	x	x	x	x		
96	Tap water energy E7	x	x	x	x		
97	Energy E8	x	x	x			
110	Energy E9	x	x	x			
473	Energy E10	x	x	x			
474	Energy E11	x	x	x			
611	Energy E12	x	x	x			
612	Energy E13	x	x	x			
613	Energy E14	x	x	x			
614	Energy E15	x	x	x			
615	Energy E16	x	x	x			
178	Differential energy dE	x	x	x	x		
179	Control energy cE	x	x	x	x		
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
180	Differential volume dV	x	x	x	x		
181	Control volume cV	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
224	Pulse input A2	x	x	x	x		
225	Pulse input B2	x	x	x	x		
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
616	Mass M3	x	x	x	x		
617	Mass M4	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1600	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
599	t1 max year date/time	x					
603	t1 max year	x					
601	t1 min year date/time	x					
605	t1 min year	x					
591	t2 max year date/time	x					
595	t2 max year	x					
593	t2 min year date/time	x					
597	t2 min year	x					
598	t1 max month date/time		x				
602	t1 max month		x				
600	t1 min month date/time		x				
604	t1 min month		x				
590	t2 max month date/time		x				
594	t2 max month		x				
592	t2 min month date/time		x				
596	t2 min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
477	t3 time average day			x			
635	t4 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
478	t3 time average hour				x		
636	t4 time average hour				x		
505	P1 average day			x			
506	P2 average day			x			
507	P1 average hour				x		
508	P2 average hour				x		
1004	Operating hours	x	x				
175	Error hour counter	x	x	x			

16.6 Diagnostic 1 (RR 15)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	1m	...m
Logger depth		20	72	460	0	25920	-
1003	Date [yy.mm.dd]	x	x	x		x	
1002	Time [hh.mm.ss]	x	x	x		x	
60	Heat energy E1	x	x	x			
63	Cooling energy E3	x	x	x			
68	Volume V1	x	x	x			
72	Mass M1	x	x	x			
99/369	Info code	x	x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
599	t1 max year date/time	x					
603	t1 max year	x					
601	t1 min year date/time	x					
605	t1 min year	x					
591	t2 max year date/time	x					
595	t2 max year	x					
593	t2 min year date/time	x					
597	t2 min year	x					
598	t1 max month date/time		x				
602	t1 max month		x				
600	t1 min month date/time		x				
604	t1 min month		x				
590	t2 max month date/time		x				
594	t2 max month		x				
592	t2 min month date/time		x				
596	t2 min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
1004	Operating hours	x	x				
175	Error hour counter	x	x	x			
86	t1 actual [2 decimals]					x	
87	t2 actual [2 decimals]					x	
74	Flow V1 actual					x	

16.7 Diagnostic 2 (RR 16)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	1m	...m
Logger depth		20	36	460	-	12960	-
1003	Date (yy.mm.dd)	x	x	x		x	
1002	Time (hh.mm.ss)	x	x	x		x	
60	Heat energy E1	x	x	x			
63	Cooling energy E3	x	x	x			
97	Energy E8	x	x	x			
110	Energy E9	x	x	x			
473	Energy E10	x	x	x			
68	Volume V1	x	x	x			
69	Volume V2	x	x	x			
72	Mass M1	x	x	x			
73	Mass M2	x	x	x			
369	Info bits	x	x	x			
1004	Operating hours	x	x	x			
175	Error hour counter	x	x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
599	t1 max year date/time	x					
603	t1 max year	x					
601	t1 min year date/time	x					
605	t1 min year	x					
591	t2 max year date/time	x					
595	t2 max year	x					
593	t2 min year date/time	x					
597	t2 min year	x					
598	t1 max month date/time		x				
602	t1 max month		x				
600	t1 min month date/time		x				
604	t1 min month		x				
590	t2 max month date/time		x				
594	t2 max month		x				
592	t2 min month date/time		x				
596	t2 min month		x				

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	1m	...m
Logger depth		20	36	460	-	12960	-
1003	Date (yy.mm.dd)	x	x	x		x	
1002	Time (hh.mm.ss)	x	x	x		x	
379	t1 time average day			x			
380	t2 time average day			x			
505	P1 average day			x			
506	P2 average day			x			
86	t1 actual (2 decimals)					x	
87	t2 actual (2 decimals)					x	
74	Flow V1 actual					x	
75	Flow V2 actual					x	
80	Power E1/E3 actual					x	
91	P1 actual					x	
92	P2 actual					x	

16.8 Kiev (RR 17)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1600	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1	x	x	x	x		
94	Heat energy E2	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
61	Inlet energy E4	x	x	x	x		
62	Outlet energy E5	x	x	x	x		
95	Tap water energy E6	x	x	x	x		
96	Tap water energy E7	x	x	x	x		
97	Energy E8	x	x	x			
110	Energy E9	x	x	x			
473	Energy E10	x	x	x			
474	Energy E11	x	x	x			
611	Energy E12	x	x	x			
612	Energy E13	x	x	x			
613	Energy E14	x	x	x			
614	Energy E15	x	x	x			
615	Energy E16	x	x	x			
178	Differential energy dE	x	x	x	x		
179	Control energy cE	x	x	x	x		
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
180	Differential volume dV	x	x	x	x		
181	Control volume cV	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
224	Pulse input A2	x	x	x	x		
225	Pulse input B2	x	x	x	x		
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
616	Mass M3	x	x	x	x		
617	Mass M4	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1600	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
599	t1 max year date/time	x					
603	t1 max year	x					
601	t1 min year date/time	x					
605	t1 min year	x					
591	t2 max year date/time	x					
595	t2 max year	x					
593	t2 min year date/time	x					
597	t2 min year	x					
598	t1 max month date/time		x				
602	t1 max month		x				
600	t1 min month date/time		x				
604	t1 min month		x				
590	t2 max month date/time		x				
594	t2 max month		x				
592	t2 min month date/time		x				
596	t2 min month		x				
355	COP year	x					
367	COP month		x				
379	t1 time average day			x			
380	t2 time average day			x			
477	t3 time average day			x			
635	t4 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
478	t3 time average hour				x		
636	t4 time average hour				x		
505	P1 average day			x			
506	P2 average day			x			
507	P1 average hour				x		
508	P2 average hour				x		
1004	Operating hours	x	x	x			
175	Error hour counter	x	x	x			

16.9 Information sensitive (RR 18)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	-	-	-	-
1003	Date (yy.mm.dd)	x	x				
1002	Time (hh.mm.ss)	x	x				
60	Heat energy E1	x					
63	Cooling energy E3	x					
68	Volume V1	x					
99/369	Info code	x					
1004	Operating hours	x	x				
175	Error hour counter	x	x				

16.10 Norton (RR 19)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	1m	...m
Logger depth		20	36	460	1400	11000	-
1003	Date [yy.mm.dd]	x	x	x	x	x	
1002	Time [hh.mm.ss]	x	x	x	x	x	
60	Heat energy E1	x	x	x			
63	Cooling energy E3	x	x	x			
97	Energy E8	x	x	x			
110	Energy E9	x	x	x			
474	Energy E11	x	x	x			
64	Tariff TA2	x	x	x			
65	Tariff TA3	x	x	x			
362	Tariff TA4	x	x	x			
68	Volume V1	x	x	x			
69	Volume V2	x	x	x			
84	Pulse input A1	x	x	x			
85	Pulse input B1	x	x	x			
224	Pulse input A2	x	x	x			
225	Pulse input B2	x	x	x			
369	Info bits	x	x	x			
1004	Operating hours	x	x				
175	Error hour counter	x	x				
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
355	COP year	x					
367	COP Month		x				
379	t1 time average day			x			
380	t2 time average day			x			
477	t3 time average day			x			
635	t4 time average day			x			
86	t1 actual [2 decimals]					x	
87	t2 actual [2 decimals]					x	
88	t3 actual [2 decimals]					x	
122	t4 actual [2 decimals]					x	
89	t1_t2 diff. temp. [2 decimals]					x	

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	1m	...m
Logger depth		20	36	460	1400	11000	-
1003	Date [yy.mm.dd]	x	x	x	x	x	
1002	Time [hh.mm.ss]	x	x	x	x	x	
74	Flow V1 actual						x
75	Flow V2 actual						x
80	Power E1/E3 actual						x
91	P1 actual						x
92	P2 actual						x

16.11 Athens (RR 20)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	24	390	5952	-	-
1003	Date (yy.mm.dd)	x	x	x	x		
1002	Time (hh.mm.ss)	x	x	x	x		
60	Heat energy E1	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
97	Energy E8	x	x	x	x		
110	Energy E9	x	x	x	x		
473	Energy E10	x	x	x	x		
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
72	Mass M1	x	x				
73	Mass M2	x	x				
369	Info bits	x	x	x	x		
1004	Operating hours	x	x	x	x		
175	Error hour counter	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
86	t1 actual [2 decimals]			x	x		
87	t2 actual [2 decimals]			x	x		
88	t3 actual [2 decimals]			x	x		
89	t1_t2 diff. temp. [2 decimals]			x	x		
74	Flow V1 actual			x	x		
75	Flow V2 actual			x	x		
80	Power E1/E3 actual			x	x		

16.12 Noe (RR 21)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		16	72	2190	2160	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
97	Energy E8	x	x	x	x		
110	Energy E9	x	x	x	x		
473	Energy E10	x	x	x	x		
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
369	Info bits	x	x	x	x		
1004	Operating hours	x	x	x	x		
175	Error hour counter	x	x				
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
599	t1 max year date/time	x					
603	t1 max year	x					
601	t1 min year date/time	x					
605	t1 min year	x					
591	t2 max year date/time	x					
595	t2 max year	x					
593	t2 min year date/time	x					
597	t2 min year	x					
598	t1 max month date/time		x				
602	t1 max month		x				
600	t1 min month date/time		x				
604	t1 min month		x				
590	t2 max month date/time		x				
594	t2 max month		x				
592	t2 min month date/time		x				
596	t2 min month		x				

16.13 Munich (RR 22)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	15m	...m
Logger depth		20	72	730	4000	4000	-
1003	Date (yy.mm.dd)	x	x	x	x	x	
1002	Time (hh.mm.ss)	x	x	x	x	x	
60	Heat energy E1	x	x	x	x	x	
63	Cooling energy E3	x	x	x	x	x	
97	Energy E8	x	x				
110	Energy E9	x	x				
613	Energy E14	x	x				
614	Energy E15	x	x				
615	Energy E16	x	x				
64	Tariff TA2	x	x	x	x		
65	Tariff TA3	x	x	x	x		
362	Tariff TA4	x	x	x	x		
68	Volume V1	x	x	x	x	x	
84	Pulse input A1	x	x	x	x		
224	Pulse input A2	x	x	x	x		
369	Info bits	x	x	x	x		
1004	Operating hours	x	x	x	x		
175	Error hour counter	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
86	t1 actual [2 decimals]				x	x	
87	t2 actual [2 decimals]				x	x	
89	t1_t2 diff. temp. [2 decimals]				x	x	
74	Flow V1 actual				x	x	
80	Power E1/E3 actual				x	x	

16.14 Tartu (RR 23)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		5	12	-	-	6400	-
1003	Date [yy.mm.dd]	x	x			x	
1002	Time [hh.mm.ss]	x	x			x	
60	Heat energy E1	x	x			x	
63	Cooling energy E3	x	x			x	
97	Energy E8	x	x			x	
110	Energy E9	x	x			x	
68	Volume V1	x	x			x	
69	Volume V2	x	x			x	
84	Pulse input A1	x	x			x	
85	Pulse input B1	x	x			x	
224	Pulse input A2	x	x				
225	Pulse input B2	x	x				
369	Info bits	x	x			x	
1004	Operating hours	x	x			x	
175	Error hour counter	x	x			x	
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
142	Power max month date		x				
143	Power max month		x				
86	t1 actual [2 decimals]					x	
87	t2 actual [2 decimals]					x	
88	t3 actual [2 decimals]					x	
74	Flow V1 actual					x	
75	Flow V2 actual					x	
80	Power E1/E3 actual					x	
91	P1 actual					x	
92	P2 actual					x	

16.15 Wetzlar (RR 24)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	10m	...m
Logger depth		20	36	460	1400	15000	-
1003	Date [yy.mm.dd]	x	x	x	x	x	
1002	Time [hh.mm.ss]	x	x	x	x	x	
60	Heat energy E1	x	x	x	x	x	
94	Heat energy E2	x	x				
63	Cooling energy E3	x	x	x	x		
61	Inlet energy E4	x	x				
62	Outlet energy E5	x	x				
95	Tap water energy E6	x	x				
96	Tap water energy E7	x	x				
97	Energy E8	x	x				
110	Energy E9	x	x				
473	Energy E10	x	x				
474	Energy E11	x	x				
611	Energy E12	x	x				
612	Energy E13	x	x				
613	Energy E14	x	x				
614	Energy E15	x	x				
615	Energy E16	x	x				
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
224	Pulse input A2	x	x	x	x		
225	Pulse input B2	x	x	x	x		
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
616	Mass M3	x	x	x	x		
617	Mass M4	x	x	x	x		
369	Info bits	x	x	x	x		
1004	Operating hours	x	x				
175	Error hour counter	x	x				
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	10m	...m
Logger depth		20	36	460	1400	15000	-
1003	Date [yy.mm.dd]	x	x	x	x	x	
1002	Time [hh.mm.ss]	x	x	x	x	x	
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
599	t1 max year date/time	x					
603	t1 max year	x					
601	t1 min year date/time	x					
605	t1 min year	x					
591	t2 max year date/time	x					
595	t2 max year	x					
593	t2 min year date/time	x					
597	t2 min year	x					
598	t1 max month date/time		x				
602	t1 max month		x				
600	t1 min month date/time		x				
604	t1 min month		x				
590	t2 max month date/time		x				
594	t2 max month		x				
592	t2 min month date/time		x				
596	t2 min month		x				
86	t1 actual [2 decimals]						x
87	t2 actual [2 decimals]						x
74	Flow V1 actual						x
80	Power E1/E3 actual						x

16.16 Doetinchem (RR 25)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	1m	...m
Logger depth		20	36	460	1400	5000	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1	x	x	x	x		
94	Heat energy E2	x	x	x	x		
63	Cooling energy E3	x	x	x	x		
61	Inlet energy E4	x	x	x	x		
62	Outlet energy E5	x	x	x	x		
95	Tap water energy E6	x	x	x	x		
96	Tap water energy E7	x	x	x	x		
97	Energy E8	x	x	x	x		
110	Energy E9	x	x	x	x		
473	Energy E10	x	x	x	x		
474	Energy E11	x	x	x	x		
611	Energy E12	x	x	x	x		
612	Energy E13	x	x	x	x		
613	Energy E14	x	x	x	x		
614	Energy E15	x	x	x	x		
615	Energy E16	x	x	x	x		
178	Differential energy dE	x	x	x	x		
179	Control energy cE	x	x	x	x		
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
180	Differential volume dV	x	x	x	x		
181	Control volume cV	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
224	Pulse input A2	x	x	x	x		
225	Pulse input B2	x	x	x	x		
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
616	Mass M3	x	x	x	x		
617	Mass M4	x	x	x	x		
369	Info bits	x	x	x	x		
1004	Operating hours	x	x				
175	Error hour counter	x	x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
129	Power min year date	x					
130	Power min year	x					

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	1m	...m
Logger depth		20	36	460	1400	5000	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
144	Power min month date		x				
145	Power min month		x				
599	t1 max year date/time	x					
603	t1 max year	x					
601	t1 min year date/time	x					
605	t1 min year	x					
591	t2 max year date/time	x					
595	t2 max year	x					
593	t2 min year date/time	x					
597	t2 min year	x					
598	t1 max month date/time		x				
602	t1 max month		x				
600	t1 min month date/time		x				
604	t1 min month		x				
590	t2 max month date/time		x				
594	t2 max month		x				
592	t2 min month date/time		x				
596	t2 min month		x				
379	t1 time average day			x			
380	t2 time average day			x			
477	t3 time average day			x			
635	t4 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		
478	t3 time average hour				x		
636	t4 time average hour				x		
505	P1 average day			x			
506	P2 average day			x			
507	P1 average hour				x		
508	P2 average hour				x		
86	t1 actual (2 decimals)					x	
87	t2 actual (2 decimals)					x	
88	t3 actual (2 decimals)					x	
122	t4 actual (2 decimals)					x	

16.17 LinkIQ (RR 50)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date (yy.mm.dd)	x	x	x	x		
1002	Time (hh.mm.ss)	x	x	x	x		
60	Heat energy E1		x	x	x		
94	Heat energy E2		x	x	x		
63	Cooling energy E3		x	x	x		
97	Energy E8		x	x	x		
110	Energy E9		x	x	x		
473	Energy E10		x				
474	Energy E11		x				
611	Energy E12		x				
364	Heat energy A1		x				
365	Heat energy A2		x				
64	Tariff TA2		x				
65	Tariff TA3		x				
362	Tariff TA4		x				
68	Volume V1		x	x	x		
69	Volume V2		x				
84	Pulse input A1		x				
85	Pulse input B1		x				
224	Pulse input A2		x				
225	Pulse input B2		x				
72	Mass M1		x				
73	Mass M2		x				
616	Mass M3		x				
617	Mass M4		x				
369	Info bits		x	x			
1004	Operating hours		x	x			
175	Error hour counter		x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
127	Power max year date	x					
128	Power max year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
142	Power max month date		x				
143	Power max month		x				
86	t1 actual [2 decimals]		x				
87	t2 actual [2 decimals]		x				
88	t3 actual [2 decimals]		x				
122	t4 actual [2 decimals]		x				

16.18 LinkIQ 2 (RR 51)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1		x	x	x		
94	Heat energy E2		x	x	x		
63	Cooling energy E3		x	x	x		
97	Energy E8		x	x	x		
110	Energy E9		x	x	x		
473	Energy E10		x				
474	Energy E11		x				
611	Energy E12		x				
364	Heat energy A1		x				
365	Heat energy A2		x				
64	Tariff TA2		x				
65	Tariff TA3		x				
362	Tariff TA4		x				
68	Volume V1		x	x	x		
69	Volume V2		x				
84	Pulse input A1		x				
85	Pulse input B1		x				
224	Pulse input A2		x				
225	Pulse input B2		x				
72	Mass M1		x				
73	Mass M2		x				
616	Mass M3		x				
617	Mass M4		x				
369	Info bits		x	x			
1004	Operating hours		x	x			
175	Error hour counter		x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
379	t1 time average day			x			
380	t2 time average day			x			
477	t3 time average day			x			
635	t4 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
478	t3 time average hour				x		
636	t4 time average hour				x		
86	t1 actual (2 decimals)		x		x		
87	t2 actual (2 decimals)		x		x		
88	t3 actual (2 decimals)		x				
122	t4 actual (2 decimals)		x				
74	Flow V1 actual				x		

16.19 LinkIQ 3 (RR 52)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1		x	x	x		
94	Heat energy E2		x	x	x		
63	Cooling energy E3		x	x	x		
97	Energy E8		x	x	x		
110	Energy E9		x	x	x		
473	Energy E10		x				
474	Energy E11		x				
611	Energy E12		x				
364	Heat energy A1		x				
365	Heat energy A2		x				
64	Tariff TA2		x				
65	Tariff TA3		x				
362	Tariff TA4		x				
68	Volume V1		x	x	x		
69	Volume V2		x				
84	Pulse input A1		x				
85	Pulse input B1		x				
224	Pulse input A2		x				
225	Pulse input B2		x				
72	Mass M1		x				
73	Mass M2		x				
616	Mass M3		x				
617	Mass M4		x				
369	Info bits		x	x			
1004	Operating hours		x	x			
175	Error hour counter		x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
379	t1 time average day			x			
380	t2 time average day			x			
477	t3 time average day			x			
635	t4 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
478	t3 time average hour				x		
636	t4 time average hour				x		
86	t1 actual [2 decimals]		x		x		
87	t2 actual [2 decimals]		x		x		
88	t3 actual [2 decimals]		x				
122	t4 actual [2 decimals]		x				
74	Flow V1 actual				x		
80	Power E1/E3 actual	x	x	x	x		

16.20 LinkIQ PDO (RR 53)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1		x	x	x		
94	Heat energy E2		x	x	x		
63	Cooling energy E3		x	x	x		
97	Energy E8		x	x	x		
110	Energy E9		x	x	x		
473	Energy E10		x	x	x		
474	Energy E11		x	x	x		
611	Energy E12		x	x	x		
364	Heat energy A1		x				
365	Heat energy A2		x				
64	Tariff TA2		x				
65	Tariff TA3		x				
362	Tariff TA4		x				
68	Volume V1		x	x	x		
69	Volume V2		x	x	x		
84	Pulse input A1		x				
85	Pulse input B1		x				
224	Pulse input A2		x				
225	Pulse input B2		x				
72	Mass M1		x	x	x		
73	Mass M2		x	x	x		
616	Mass M3		x	x	x		
617	Mass M4		x	x	x		
369	Info bits		x	x			
1004	Operating hours		x	x			
175	Error hour counter		x	x			
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power max year date	x					
128	Power max year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power max month date		x				
143	Power max month		x				
379	t1 time average day			x			
380	t2 time average day			x			
477	t3 time average day			x			
635	t4 time average day			x			
381	t1 time average hour				x		
382	t2 time average hour				x		

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date (yy.mm.dd)	x	x	x	x		
1002	Time (hh.mm.ss)	x	x	x	x		
478	t3 time average hour				x		
636	t4 time average hour				x		
86	t1 actual [2 decimals]		x	x	x		
87	t2 actual [2 decimals]		x	x	x		
88	t3 actual [2 decimals]		x	x	x		
122	t4 actual [2 decimals]		x	x	x		
74	Flow V1 actual		x	x	x		
80	Power E1/E3 actual		x	x	x		

16.21 KM RF (RR 90)

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date [yy.mm.dd]	x	x	x	x		
1002	Time [hh.mm.ss]	x	x	x	x		
60	Heat energy E1	x	x	x	x		
94	Heat energy E2	x	x		x		
63	Cooling energy E3	x	x	x	x		
61	Inlet energy E4	x	x		x		
62	Outlet energy E5	x	x		x		
95	Tap water energy E6	x	x		x		
96	Tap water energy E7	x	x		x		
97	Energy E8	x	x		x		
110	Energy E9	x	x		x		
64	Tariff TA2	x	x				
65	Tariff TA3	x	x				
362	Tariff TA4	x	x				
68	Volume V1	x	x	x	x		
69	Volume V2	x	x	x	x		
84	Pulse input A1	x	x	x	x		
85	Pulse input B1	x	x	x	x		
72	Mass M1	x	x	x	x		
73	Mass M2	x	x	x	x		
99/369	Info code	x	x	x	x		
123	Flow V1 max year date	x					
124	Flow V1 max year	x					
125	Flow V1 min year date	x					
126	Flow V1 min year	x					
127	Power Max year date	x					
128	Power Max year	x					
129	Power Min year date	x					
130	Power Min year	x					
138	Flow V1 max month date		x				
139	Flow V1 max month		x				
140	Flow V1 min month date		x				
141	Flow V1 min month		x				
142	Power Max month date		x				
143	Power Max month		x				
144	Power Min month date		x				
145	Power Min month		x				
1004	Operating hours	x	x		x		
175	Error hour counter	x	x		x		
86	t1 actual [2 decimals]				x		
87	t2 actual [2 decimals]				x		
88	t3 actual [2 decimals]				x		
122	t4 actual [2 decimals]				x		
89	t1-t2 diff. temp. [2 decimals]				x		
74	Flow V1 actual				x		
75	Flow V2 actual				x		

MULTICAL® 803							
Register ID (dec)	Register name	Year	Month	Day	Hour	Minute 1	Minute 2
Logger interval		1y	1m	1d	1h	...m	...m
Logger depth		20	36	460	1400	-	-
1003	Date (yy.mm.dd)	x	x	x	x		
1002	Time (hh.mm.ss)	x	x	x	x		
80	Power E1/E3 actual				x		
91	P1 actual				x		
92	P2 actual				x		

17 Available logger registers

Register ID (dec)	Register name	Register description	MULTICAL® 403	MULTICAL® 603	MULTICAL® 803
1003	Date (yy.mm.dd)	Date (yy.mm.dd) for when data is logged or actual date	✓	✓	✓
1002	Time (hh.mm.ss)	Time (hh.mm.ss) Hour, minute, seconds	✓	✓	✓
60	Heat energy E1	$E1 = V1(t1-t2)k$ Heat energy	✓	✓	✓
94	Heat energy E2	$E2 = V2(t1-t2)k$ Heat energy		✓	✓
63	Cooling energy E3	$E3 = V1(t2-t1)k$ Cooling energy	✓	✓	✓
61	Inlet energy E4	$E4 = V1(t1-t3)k$ Inlet energy		✓	✓
62	Outlet energy E5	$E5 = V2(t2-t3)k$ Outlet energy or tap from outlet		✓	✓
95	Tap water energy E6	$E6 = V2(t3-t4)k$ Tap water energy, separate		✓	✓
96	Tap water energy E7	$E7 = V2(t1-t3)k$ Tap water energy from inlet		✓	✓
97	Energy E8	$E8 = V1 \times t1$ (inlet)	✓	✓	✓
110	Energy E9	$E9 = V1 \times t2$ (outlet)	✓	✓	✓
473	Energy E10	$E10 = V1 \times t3$		✓	✓
474	Energy E11	$E11 = V2 \times t3$		✓	✓
611	Energy E12	$E12 = V2 \times (t2-t1)k$ t2 Cooling energy			✓
612	Energy E13	$E13 = V1 \times (t3-t4)k$ t1/t2 Heat energy in serial system			✓
613	Energy E14	$E14 = V2 \times (t3-t4)k$ t3/t4 Heat energy in parallel system			✓
614	Energy E15	$E15 = V1 \times (t4-t3)k$ t1/t2 Cooling energy in serial system			✓
615	Energy E16	$E16 = V2 \times (t4-t3)k$ t3/t4 Cooling energy in parallel system			✓
178	Differential energy dE	Differential energy dE		✓	✓
179	Control energy cE	Control energy cE		✓	✓
364	Heat energy A1	Heat energy with discount A1 (t2 < t5 limit)	✓	✓	✓
365	Heat energy A2	Heat energy with surcharge A2 (t2 > t5 limit)	✓	✓	✓
64	Tariff TA2	Tariff register TA2	✓	✓	✓
65	Tariff TA3	Tariff register TA3	✓	✓	✓
362	Tariff TA4	Tariff register TA4	✓	✓	✓
68	Volume V1	Volume register for Volume 1	✓	✓	✓
69	Volume V2	Volume register for Volume 2		✓	✓
180	Differential volume dV	Differential volume		✓	✓
181	Control volume cV	Control volume		✓	✓
84	Pulse input A1	Extra water meter connected to Input A1	✓	✓	✓
85	Pulse input B1	Extra water or electricity meter connected to Input B1	✓	✓	✓
224	Pulse input A2	Extra water meter connected to Input A2		✓	✓
225	Pulse input B2	Extra water or electricity meter connected to Input B2		✓	✓
72	Mass M1	Mass M1 for volume V1 with t1		✓	✓
73	Mass M2	Mass M2 for volume V2 with t2		✓	✓

Register ID (dec)	Register name	Register description	MULTICAL® 403	MULTICAL® 603	MULTICAL® 803
616	Mass M3	Mass M3 for volume V2 with t3			✓
617	Mass M4	Mass M4 for volume V2 with t4			✓
99/369	Info code / Info bits	Information code	✓	✓	✓
123	Flow V1 max year date	Date for max. flow V1 for the year	✓	✓	✓
124	Flow V1 max year	Value for max. flow V1 for the year	✓	✓	✓
125	Flow V1 min year date	Date for min. flow V1 for the year	✓	✓	✓
126	Flow V1 min year	Value for min. flow V1 for the year	✓	✓	✓
127	Power Max year date	Date for max. power for the year	✓	✓	✓
128	Power Max year	Value for max. power for the year	✓	✓	✓
129	Power Min year date	Date for min. power for the year	✓	✓	✓
130	Power Min year	Value for min. power for the year	✓	✓	✓
138	Flow V1 max month date	Date for max. flow V1 for the month	✓	✓	✓
139	Flow V1 max month	Value for max. flow V1 for the month	✓	✓	✓
140	Flow V1 min month date	Date for min. flow V1 for the month	✓	✓	✓
141	Flow V1 min month	Value for min. flow V1 for the month	✓	✓	✓
142	Power Max month date	Date for max. power for the month	✓	✓	✓
143	Power Max month	Value for max. power for the month	✓	✓	✓
144	Power Min month date	Date for min. power for the month	✓	✓	✓
145	Power Min month	Value for min. power for the month	✓	✓	✓
599	t1 max year date/time	Date and time for max. temperature t1 for the year			✓
603	t1 max year	Value for max. temperature t1 for the year			✓
601	t1 min year date/time	Date and time for min. temperature t1 for the year			✓
605	t1 min year	Value for min. temperature t1 for the year			✓
591	t2 max year date/time	Date and time for max. temperature t2 for the year			✓
595	t2 max year	Value for max. temperature t2 for the year			✓
593	t2 min year date/time	Date and time for min. temperature t2 for the year			✓
597	t2 min year	Value for min. temperature t2 for the year			✓
598	t1 max month date/time	Date and time for max. temperature t1 for the month			✓
602	t1 max month	Value for max. temperature t1 for the month			✓
600	t1 min month date/time	Date and time for min. temperature t1 for the month			✓
604	t1 min month	Value for min. temperature t1 for the month			✓
590	t2 max month date/time	Date and time for max. temperature t2 for the month			✓
594	t2 max month	Value for max. temperature t2 for the month			✓
592	t2 min month date/time	Date and time for min. temperature t2 for the month			✓
596	t2 min month	Value for min. temperature t2 for the month			✓

Register ID (dec)	Register name	Register description	MULTICAL® 403	MULTICAL® 603	MULTICAL® 803
355	COP year	Coefficient Of Performance since last year log	✓	✓	✓
367	COP month	Coefficient Of Performance since last month log	✓	✓	✓
379	t1 time average day	Daily time based average for temperature t1	✓	✓	✓
380	t2 time average day	Daily time based average for temperature t2	✓	✓	✓
477	t3 time average day	Daily time based average for temperature t3		✓	✓
635	t4 time average day	Daily time based average for temperature t4			✓
381	t1 time average hour	Hourly time based average for temperature t1	✓	✓	✓
382	t2 time average hour	Hourly time based average for temperature t2	✓	✓	✓
478	t3 time average hour	Hourly time based average for temperature t3		✓	✓
636	t4 time average hour	Hourly time based average for temperature t4			✓
505	P1 average day	Daily sampled based average for analog input P1		✓	✓
506	P2 average day	Daily sampled based average for analog input P2		✓	✓
507	P1 average hour	Hourly sampled based average for analog input P1		✓	✓
508	P2 average hour	Hourly sampled based average for analog input P2		✓	✓
1004	Operating hours	Accumulated number of operating hours	✓	✓	✓
175	Error hour counter	Accumulated number of error hours	✓	✓	✓
86	t1 actual [2 decimals]	Actual value of temperature t1 with 2 decimals [0.00 °C]	✓	✓	✓
87	t2 actual [2 decimals]	Actual value of temperature t2 with 2 decimals [0.00 °C]	✓	✓	✓
88	t3 actual [2 decimals]	Actual value of temperature t3 with 2 decimals [0.00 °C]		✓	✓
122	t4 actual [2 decimals]	Actual value of temperature t4 with 2 decimals [0.00 °C]		✓	✓
89	t1-t2 diff. temp. [2 decimals]	Actual value of temperature difference t1-t2 with 2 decimals [0.00 K]	✓	✓	✓
74	Flow V1 actual	Actual value of flow V1	✓	✓	✓
75	Flow V2 actual	Actual value of flow V2		✓	✓
80	Power E1/E3 actual	Actual value of power calculated on the basis of E1 or E3 [V1, t1, t2]	✓	✓	
91	P1 actual	Actual value of analog input P1		✓	✓
92	P2 actual	Actual value of analog input P2		✓	✓

* The sign of the value in the "Power actual" register identifies if the power is calculated of E1 or E3. For heat the "Power actual" will be a positive value and for cooling it will be a negative value. For a heat/cooling meter the sign of the value in the "Power actual" register will change as the differential temperature changes, e.g. if the meter converts from calculating heat energy [E1] to calculating cooling energy [E3].

18 Document change log

Rev.	Date	Notes
A1	02_2018	Document created and released. M-Bus config 998, Date changed to come from Year Log.
B1	04-2018	List of abbreviations updated Description of register ID 80 updated. Function of all ZZZ codes updated to include mWh with 4 decimals, GCal, MULTICAL® 603 info codes
C1	07-2019	Added MULTICAL® 803, MULTICAL® 603M and MULTICAL® 803M Config 2x-00-989 - L+G UH 50, temperatures corrected to 1 decimal text wise Configurations added wired M-Bus: 2x-00-309, 2x-00-311, 2x-00-401 Configurations added Wireless M-Bus: 3x-11-117, 3x-11-119, 3x-11-309 3x-12-115, 3x-12-116, 3x-12-118 3x-14-302,3x-14-303 3x-23-202 3x-24-204 E3 coding will onwards use OMS coding, not Kamstrup Manufacturer Specific (HCC) Added logger profile 17 "Kiev" Added logger profile 18 "Information sensitive"
D1	10-2019	Configurations added wired M-Bus: 2x-00-312, 2x-00-402 Configurations added wireless M-Bus: 3x-10-110, 3x-11-122, 3x-12-105, 3x-12-205, 3x-15-201, 3x-11-309, 3x11-401, 3x-11-402
D2	01-2020	Configurations added wired M-Bus: 2x-00-313 Configurations added wireless M-Bus: 3x-10-126, 3x-10-128, 3x-11-128,3x-11-129, 3x-12-127, 30-12-128 Added logger profile 20 "Athens" Added logger profile 21 "Noe"
D3	02-2020	Added logger profile 23 "Tartu"
D4	31-03-2020	Added logger profile 50 "LinkIQ" Configurations added wireless M-Bus: 3x-10-130, 3x-11-118, 3x-11-310, 3x-14-118, 3x-12-131, 3x-12-132
D5	14-04-2020	Added logger profile 22 "Munich"
D6	15-05-2020	Added logger profile 24 "Wetzlar" Added logger profile 19 "Norton"
D7	18-06-2020	Added logger profile 25 "Doetinchem"
A1	25-09-2020	Dokumentet 55122245 is replaced by 55122699 ! The wMbus datagrams for modules 30/31 are changed into LinkIQ/wMbus Modules 32/33 55122245_D7_GB.pdf dated 18-06-2020 is the last valid revision for modules 30/31.
A2	28-09-2020	Added logger profile 51 "LinkIQ 2"
A3	11-11-2020 OSK	Added datagrams 32-10-130 32-12-131 32-11-312 32-10-126 32-14-305
A4	20-01-2020	Added logger profile 52 "LinkIQ 3"
A5	10-05-2021 OSK	32-11-134 Added chapter "Battery lifetime wireless datagrams"
A6	23-06-2021	Datagram 32-24-204 marked as not available Datagram 20-00-317 added

Rev.	Date	Notes
A7	14-09-2021 KARN	Tilføjet loggerprofil 603-53 803-53
A8	4-05-2022	Tilføjet 2x-00-320 Analog Profile II (2x-00-308 is replaced)
A9	12-10-2022	Tilføjet af KARN 32-11-135 32-11-138 32-11-140