Din rail mounted energy meter Modbus address

This manual is applicable to the product model

-RLE01-2M

-RLE03-2M

1. Modbus-RTU communication

1.1 Message format

Read data register value (function code 0x03/0x04)

master request	frame structure	address code	FC	numeric data code		check code
				Start register address	Number of registers	
	occupied byte	1byte	1byte	2byte	2byte	2byte
	data area	1～247	0x03/0x04		Max 100	CRC16
	examples of messages	0x01	0x03	0x00 0x00	0x00 0x06	0xC5 0xC8
Slave response	frame structure	address code	FC	numeric data code		check code
				Register bytes	register value	
	occupied byte	1byte	1byte	2byte	12byte	2byte
	examples of messages	0x01	0x03	0x0C	12	CRC16

Note: The start register address of the host request is the data header address of the query. The number of the registers is the length of the query data. For example, the address of the upper start register is the "0x0000", and the number of the registers is 6 (0x0006).

Write setting register (function code 0x10)

master request	frame structure	address code	FC	numeric data code		check code
				Start register address	Number of registers	
	occupied byte	1byte	1byte	2byte	2byte	2byte
	data area	1～247	0x10	0x0802	Max 100	CRC16
	examples of messages	0x01	0x10	0x08 0x02	0x00 0x06	0x2FE2
Slave respon se	frame structure	address code	FC	numeric data code		check code
				Register bytes	register value	
	occupied byte	1byte	1byte	2byte	12byte	2byte
	examples of messages	0x01	0x10	0x08 0x02	0x00 0x01	0xA269

Note: Please set the information address table in strict accordance with the following instrument when writing the setting register. Do not attempt to modify the unused area. The write data does not allow the setting range to be exceeded. The wrong write-setting register has the potential to cause the instrument to work abnormally. Be careful.

1.2 Communication address information table

Data register:

Address	For mat	Data description	Unit	R / W
0000-0001	float	Voltage	V	R
0002-0003	float	Current	A	R
0004-0005	float	Active power	kW	R
0006-0007	float	Reactive power	kvar	R
0008-0009	float	Apparent output	kVA	R
000A-000B	float	Power factor	--	R
000C-000D	Float	Frequency	Hz	R
000E-000F	float	Positive active electric energy	kWh	R
0010-0011	float	Reverse active electric energy	kWh	R
0012-0013	float	Positive reactive energy	kvarh	R
0014-0015	float	Reverse reactive energy	kvarh	R
0016-00FF	--	--	--	--
0100	Int	Time (high bytes: year, low bytes: month)		R
0101	Int	Time (high bytes: day, low bytes: hours)		R
0102	Int	Time (high bytes: minutes, low bytes: seconds)		R
0103	Int	Time (high bytes: week)		R
0104-0105	--	--	--	--
0106-0107	Long	Positive active electric energy	10Wh	R
0108-0109	Long	Reverse active electric energy	10Wh	R
010A-010B	Long	Positive reactive energy	10varh	R
010C-010D	Long	Reverse reactive energy	10var	R

			h	
010E-010F	Long	Apparent electric energy	10VAh	R
0110-0111	Long	First quadrant reactive electric energy	10varh	R
0112-0113	Long	Second quadrant reactive electric energy	10varh	R
0114-0115	Long	Third quadrant reactive electric energy	10varh	R
0116-0117	Long	Fourth quadrant reactive electric energy	10varh	R
0118-0119	Long	Active energy [Total]	10Wh	R
011A-011B	Long	Active energy [Tip]	10Wh	R
011C-011D	Long	Active energy [Peak]	10Wh	R
011E-011F	Long	Active energy [Flat]	10Wh	R
0120-0121	Long	Active energy [Valley]	10Wh	R
0122-0123	Long	This month active energy [Total]	10Wh	R
0124-0125	Long	This month active energy [Tip]	10Wh	R
0126-0127	Long	This month active energy [Peak]	10Wh	R
0128-0129	Long	This month active energy [Flat]	10Wh	R
012A-012B	Long	This month active energy [Valley]	10Wh	R
012C-012D	Long	Last month active energy [Total]	10Wh	R
012E-012F	Long	Last month active energy [tip]	10Wh	R
0130-0131	Long	Last month active energy [Peak]	10Wh	R
0132-0133	Long	Last month active energy[Flat]	10Wh	R
0134-0135	Long	Last month active energy[Valley]	10WH	R
0136-0137	Long	The month before last active energy [Total]	10Wh	R
0138-0139	Long	The month before last active energy [Tip]	10Wh	R

013A-013B	Long	The month before last active energy [Peak]	10Wh	R
013C-013D	Long	The month before last active energy [Flat]	10WH	R
013E-013F	Long	The month before last active energy [Valley]	10Wh	R
0140-01FF	--	--	--	--
0200	Int	Voltage	0.1V	R
0201	Int	Current	0.01A	R
0202	Int	Active power	10W	R
0203	Int	Reactive power	10var	R
0204	Int	Apparent output	10VA	R
0205	Int	Power factor	0.001	R
0206	Int	Frequency	0.01Hz	R
0207-05FF	--	--	--	--
0600	Int	Maximum voltage	0.1V	R
0601	--	--	--	--
0602	Int	Maximum current	0.01A	R
0603	Int	Maximum active power	10W	R
0604	Int	Maximum reactive power	10var	R
0605	Int	Apparent power maximum	10VA	R
0606	Int	Maximum active power demand	10W	R
0607	Int	Maximum reactive power requirement	10var	R
0608	Int	Apparent power requirement maximum	10VA	R
0609	Int	Maximum voltage of this month	0.1V	R
060A	--	--	--	--
060B	Int	Current maximum of current month	0.01A	R

060C	Int	Maximum active power of this month	10W	R
060D	Int	Maximum reactive power this month.	10var	R
060E	Int	Apparent power maximum this month	10VA	R
060F	Int	Maximum active power demand for this month	10W	R
0610	Int	Maximum reactive power requirement this month.	10var	R
0611	Int	Maximum apparent power requirement this month.	10VA	R
0612	Int	Current active power requirement	10W	R
0613	Int	Current reactive power requirement	10var	R
0614	Int	Current apparent power requirement.	10VA	R
061C	char	Time of power-up recording (high byte: times, low bytes: years)		R
061D	char	Time for power-on recording (high byte: month, low byte: day)		R
061E	char	Time recorded by power on (high bytes: time, low bytes: minutes)		R
061F	char	Time recorded by programming (high bytes: number of times, low bytes: year)		R
0620	char	Programming recording time (high bytes: month, low bytes: day)		R
0621	char	Time to program the record (high byte:, low byte: minutes)		R
0622	char	Time to program the record (high byte:, low byte: minutes)		R
0623	char	Time for electricity to clear zero (high bytes: month, low bytes: day)		R
0624	char	Time of energy zero reset(high		R

		bytes:hours, low bytes:minutes).		

Set register:

Address	Format	Data description	Unit	R/W
0802	Int	high byte: circular display	0x01:circular display !(0x01):Invalid cycle	R/W
		Low bytes: power on display interface	0x00:U, 0x01:I 0x02:F, 0x03:P 0x04:Q, 0x05:S 0x06:PF, 0x07:E	R/W
0803	--	--	--	--
0804	Int	High bytes: instrument communication address	1-247	R/W
		Low bytes: communication baud rate	0: 300bps 1: 600bps 2：1200bps 3：2400bps 4：4800bps 5：9600bps	R/W
0805	Int	high byte: data format	0：N,8,1 1：E,8,1 2：O,8,1 3：N,8,2	R/W
0806-081F	--	--	--	--
0820	Int	demand item	Default P/Q/S	R
0821	Int	Demand working mode	0：Slip block 1：Fixed block	R/W

0822	Int	Demand slip time (t)	1～9999s	R/W
0823	Int	Calculation period required (T)	1～30t	R/W
0824-0843	--	--	--	--
0844	Char	First set daily rate table #1 period start time.	Fixed 00h：00min	R/W
8045	Char	Starting time of the first set of daily fee rates table # 2	High byte: 00-23 lower byte:00-59	R/W
8046	Char	First set daily rate table # 3 time period start time	High Byte:00-23 Low byte:00-59	R/W
8047	Char	Starting time of the first set of daily fee rates table # 4	High Byte:00-23 Low byte:00-59	R/W
8048	Char	Starting time of the first set of daily fee rates table # 5	High Byte:00-23 Low byte:00-59	R/W
8049	Char	First set daily rate table # 6 time period start time	High Byte:00-23 Low byte:00-59	R/W
804A	Char	Starting time of the first set of daily fee rates table # 7	High Byte:00-23 Low byte:00-59	R/W
804B	Char	Starting time of the first set of daily fee rates table # 8	High Byte:00-23 Low byte:00-59	R/W

804C	Char	First set daily rate table # 9 time period start time	High Byte:00-23 Low byte:00-59	R/ W
804D	Char	First set daily rate table # 10 time period start time	High Byte:00-23 Low byte:00-59	R/ W
804E	Char	First set daily rate table # 11 time period start time	High Byte:00-23 Low byte:00-59	R/ W
084F	Char	Starting time of period#12 of the first set of daily rate table.	High Byte:00-23 Low byte:00-59	R/ W
0850	Char	Second set of daily fee rate table # 1 start time	Fixed to 00h:00min.	R/ W
0851	Char	Second set of daily rate table # 2 time period start time	High Byte:00-23 Low byte:00-59	R/ W
0852	Char	Second set of daily fee rate table # 3 starting time	High Byte:00-23 Low byte:00-59	R/ W
0853	Char	Second set of daily rate table # 4 start time	High Byte:00-23 Low byte:00-59	R/ W
0854	Char	Second set daily rate table #5 period start time.	High Byte:00-23 Low byte:00-59	R/ W
0855	Char	Second set of daily fee rate table # 6 start time	High Byte:00-23 Low byte:00-59	R/ W

0856	Char	Second set of daily fee rate table # 7 start time	High Byte:00-23 Low byte:00-59	R/ W
0857	Char	Second set of daily fee rate table # 8 starting time	High Byte:00-23 Low byte:00-59	R/ W
0858	Char	Second set of daily rate table # 9 time period start time	High Byte:00-23 Low byte:00-59	R/ W
0859	Char	Second set of daily fee rate table # 10 start time	High Byte:00-23 Low byte:00-59	R/ W
085A	Char	Second set of daily fee rate table # 11 starting time	High Byte:00-23 Low byte:00-59	R/ W
085B	Char	Second set of daily fee rate table # 12 start time	High Byte:00-23 Low byte:00-59	R/ W
085C	Char	First set daily rate table # 1 and # 2 period rate	High bytes: # 1 time rate Low bytes: # 2 time rate 0-point,1-peak,2-level,3-valley	R/ W
085D	Char	First set daily rate table # 3, # 4 period rateFirst set daily rate table # 3, # 4 period rate	High bytes: # 1 time rate Low bytes: # 2 time rate 0-point,1-peak,2-level,3-valley	R/ W

085E	Char	First set daily rate table # 5, # 6 period rate	High bytes: # 1 time rate Low bytes: # 2 time rate 0-point,1-peak,2-level,3-valley	R/W
085F	Char	First set of daily fee rates # 7, 8 time rates	High bytes: # 1 time rate Low bytes: # 2 time rate 0-point,1-peak,2-level,3-valley	R/W
0860	Char	First set daily rate table # 9, # 10 period rate	High bytes: # 1 time rate Low bytes: # 2 time rate 0-point,1-peak,2-level,3-valley	R/W
0861	Char	First set daily rate table # 11, # 12 period rate	High bytes: # 1 time rate Low bytes: # 2 time rate 0-point,1-peak,2-level,3-valley	R/W
0862	Char	Second set of daily fee rate table # 1, 2 time rate	High bytes: # 1 time rate Low bytes: # 2 time rate 0-point,1-peak,2-level,3-valley	R/W

0863	Char	Second set of daily fee rate table # 3, 4 time rate	High bytes: # 1 time rate Low bytes: # 2 time rate 0-point,1-peak,2-level,3-valley	R/W
0864	Char	Second set of daily fee rates # 5, 6 time rates	High bytes: # 1 time rate Low bytes: # 2 time rate 0-point,1-peak,2-level,3-valley	R/W
0865	Char	The second set of daily rates table#7, #8 period rates.	High bytes: # 1 time rate Low bytes: # 2 time rate 0-point,1-peak,2-level,3-valley	R/W
0866	Char	Second set of daily rate table # 9, # 10 period rate	High bytes: # 1 time rate Low bytes: # 2 time rate 0-point,1-peak,2-level,3-valley	R/W
0867	Char	Second set of daily fee rates # 11, 12 time rates	High bytes: # 1 time rate Low bytes: # 2 time rate 0-point,1-peak,2-level,3-valley	R/W

0868	Char	Monthly fee scale (January, February)	High bytes: January daily fee table Low bytes: February daily fee table	R/W
0869	Char	Monthly rate table (March, April)	High bytes: March daily fee table Low bytes: April daily fee table 0: the first set of daily fee rates 1: Second set of daily rates.	R/W
086A	Char	Monthly fee scale (May, June)	0: the first set of daily fee rates 1: Second set of daily rates.	R/W
086B	Char	Monthly fee scale (July, August)	High byte: July day rate table. Low Byte: August Day Rate Table 0: the first set of daily fee rates 1: Second set of daily rates.	R/W
086C	Char	Monthly rate table (September, October)	High byte: September day rate table. Low bytes: October daily fee table 0: the first set of	R/W

			daily fee rates 1: Second set of daily rates.	
086D	Char	Monthly fee scale (November, December)	High Byte: November Day Rate Table Low Byte: December Day Rate Table 0: the first set of daily fee rates 1: Second set of daily rates.	R/W
086E	Char	Meter reading day setting	High Byte:00-23 Low byte:00-59	R/W

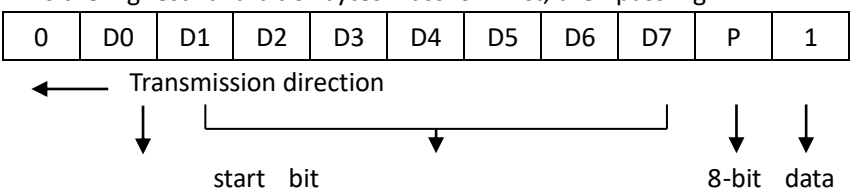
2. DL/T 645 Communicating protocol

2.1 Transfer characteristic

The main-slave half-duplex communication mode and the establishment and cancellation of communication links are controlled by the information frames sent by the main station. Each frame has a frame starter, which is composed of seven parts: station address domain, control code, data length, frame information longitudinal check code and frame Terminator. Each part consists of a number of bytes.

Half dual port communication mode, baud rate: 1200bps;

Byte format: each byte contains 8-bit binary code, with a starting bit (0), an even check bit and a stop bit (1). The transmission sequence as shown in figure 1.D0 is the lowest valid bit of bytes and D 7 is the highest valid bit of bytes. Pass low first, then pass high.



Parity check bit stop bit

explain	code
frame start	68H

address field	A_0 A_1 A_2 A_3 A_4 A_5
frame start	68
control code	C
Data length domain	L
data field	DATA
check code	CS
tailed	16H

Figure 1-byte transfer sequence

The frame format is shown below.

Address field A0-A5:2-bit BCD code per byte. The low address is before and the high address is after. When the address is 99 99 99 99 99 H, it is the broadcast address.

The communication address uses the table number, and at least 2 bits or more of the low table number bit can be entered to communicate. Less input can be easily operated.

Control code C: the format of the control code.

D7＝0：The command frame sent by the master station.
D7＝1：A response frame sent from the station.
D6＝0：Answer correctly from the station.

D6＝1：slave response to abnormal information.

D5＝0：No post-read data frame.

D4～D0：Request and answer function code.

00001：read data

00100：Write data

01000：broadcast school

01111：Modify the password

Data length L: the number of bytes in the data field, hexadecimal number.

The data field data: the data field includes data identification and data whose structure changes with the function of the control code. At the time of transmission, the sender adds the 33H process according to the byte, and the receiver performs the 33H process according to the byte.

The sum of the modulo 256 of all the bytes prior to the start of the frame start to the check code, i. e., the binary arithmetic sum of the bytes, and the overflow value of not more than 256.

The end of the frame information is indicated by the end of the frame information 16h.

Preamble byte:Before sending frame information, send 1-4 FEHs to wake up the receiver.

Transmission order: All data items should be first transferred to lower byte and then high byte.

Transmission response:each communication is started by the master station sending a request command frame to the slave station selected according to the address field of the information frame, and the requested slave station responds according to the requirements of the control code in the command frame.

The response delay Td:20ms ≤ Td ≤ 500ms after receiving

the command frame,

Pause time between bytes Tb: Tb ≤ 500ms

Error control: the byte check is even, the frame check is longitudinal information checksum, the receiver abandons the information frame regardless of the parity error or longitudinal information checksum error, and does not respond.

2.2 Application description

Read data:

Master station request frame

function request read data

Control code C =01H.

Data length L = 02H

Frame format:

Function from station to normal response

Control code C = 81H

Data length L ≤ 02H m (data length)

data frame format

Slave station anomaly response frame

The function receives an illegal data request or no such data from the station

Control code C = C1H

Frame format:

Write data:

Write data request frame

The functional master station requests setting data (or programming) from the slave station

Control code C = 04H

Data length L ≤ 02H m (data length) password 4 bytes

Frame format:

68H	A0	..	A5	68H	04H	L	DI_0	DI_1	PAn	$P0_N$	$P1_N$	$P2_N$	N1	。。	Nm	CS	16H

From the station normal response frame.

the function informs the master station of the result of the execution of the request command

Control code C = 84H

Data length L = 00H

68H	A0	。。。	A5	68H	84H	00H	CS	16H

Frame format:

slave station anomaly response frame

Control code C=C4H

Data length L = 01H

Frame format:

68H	A0	。。。	A5	68H	C4H	01H	ERR	CS

broadcast school

Functions Synchronize slave and master station time.

Control code C = 08H

Data length L = 06H

Data field YYMMDDhhhmss

Frame format:

68H	99H	…	99H	68H	08H	06H	ss	mm	hh	DD	MM	YY

Note:

1. No response is required when broadcasting school.

2. Broadcasting schools are not allowed to be implemented within the range of 23 / 50 / 10.

3.School hours can only be allowed once a day, with a range of 30 seconds per minute. The maximum allowable error in broadcasting school is ±20 minutes.

To modify the password:

Write password request frame

The function changes the current password from the station

Control code C = 0 FH

Data length L = 08H

Data domain PA 0 P 00 P 10 P 20 PAN P 0 NP 1 NP 2 N.

Frame format:

68H	A0	…	A5	68H	0FH	08H	PA_0	$P0_0$	$P1_0$	$P2_0$	PA_N	$P0_N$	$P1_N$	$P2_N$	CS	16H

P00P10P20 is the password of the new password or higher permission. PA0 represents the password permission: P0NP1NP2N is the new password or the password to be set, PAN is the permission of the new password. PA0, the value range of PAN is 0 to 9, 0 is the higher the permission, the

lower the numerical permission.

Radio frozen electricity

Function: freeze the power immediately after receiving the command from the station.

Control code: C = 05H

Data length: l ≤ 02H

Frame format:

68H	99H	…	99H	68H	05H	02H	CS	16H

2.3 DL/T 645-1997 Communication Protocol.

2.3.1 Electrical energy data

Identification code	Data format	length	unit	Read	write	Data item name
9010	XXXXXX.XX	4	kWh	*		Positive active electric energy [total]
9011	XXXXXX.XX	4	kWh	*		Forward active power [tip]
9012	XXXXXX.XX	4	kWh	*		Positive active energy[peak]
9013	XXXXXX.XX	4	kWh	*		Positive active power [flat]
9014	XXXXXX.XX	4	kWh	*		Positive active energy[valley]
901F		20	kWh	*		Forward active power packet
9020	XXXXXX.XX	4	kWh	*		Reverse active power
9110	XXXXXX.XX	4	kvarh	*		Forward reactive power
9120	XXXXXX.XX	4	kvarh	*		reverse reactive energy

9130	XXXXXX.XX	4	kvarh	*		first-quadrant reactive power
9140	XXXXXX.XX	4	kvarh	*		fourth-quadrant reactive power
9150	XXXXXX.XX	4	kvarh	*		Second quadrant reactive power
9160	XXXXXX.XX	4	kvarh	*		third quadrant reactive power
9410	XXXXXX.XX	4	kWh	*		Active electricity [total] last month
9411	XXXXXX.XX	4	kWh	*		Active electricity [tip] last month
9412	XXXXXX.XX	4	kWh	*		last month active energy[peak]
9413	XXXXXX.XX	4	kWh	*		Active electricity [flat] last month
9414	XXXXXX.XX	4	kWh	*		last month active electric energy[valley]
941F		20	kWh	*		last month active power data packet
9810	XXXXXX.XX	4	kWh	*		Active electricity [total] last month
9811	XXXXXX.XX	4	kWh	*		The last month was active [sharp].
9812	XXXXXX.XX	4	kWh	*		last month active energy[peak]
9813	XXXXXX.XX	4	kWh	*		Last month active energy[Ping]
9814	XXXXXX.XX	4	kWh	*		Active electricity [valley] last month
981F		20	kWh	*		Active power packet last month
9FFF		88	kWh	*		All of the above power packets

2.3.2 variable data

Identification code	data format	length	unit	read	write	Data item name
B611	XXXX	2	V	*		voltage
B621	XX.XX	2	A	*		current
B630	XX.XXXX	3	kW	*		active power
B640	XX.XX	2	kvar	*		Total reactive power
B650	X.XXX	2	0.001	*		total power factor
B660	XX.XX	2	kVA	*		total apparent power
B680	XX.XX	2	Hz	*		frequency
B6FF	-	15	-	*		Instantaneous power packet

2.3.3 parametric data

Identification code	data format	length	unit	read	write	Data item name	
C010	YYMMDDWW	4	Year, month, day, week	*	*	Date and week	This identity code is invalid when there is no duplicate rate function
C011	hhmmss	3	Time and second	*	*	Time	
C117	DDhh	2	daytime	*	*	Automatic meter reading date	
C023	XX	1		*		Power meter operation status word 2 (see note)	
C030	NNNNNN	3	imp/kWh	*	*	active pulse constant	
C031	NNNNNN	3	imp/kvarh	*	*	reactive pulse constant	
C032	NNNNNNN	6		*	*	Table No. (Table No. data is less	

	NNNNN					than 247)	
C331	hhmmNN	3	time-division rate	*	*	Period 1 (start time default is 00:00)	The data encoding is not valid when there is no complex rate function.
C332	hhmmNN	3	time-division rate	*	*	Period 2	
C333	hhmmNN	3	time-division rate	*	*	Period 3	
C334	hhmmNN	3	time-division rate	*	*	Period 4	
C335	hhmmNN	3	time-division rate	*	*	Period 5	
C336	hhmmNN	3	time-division rate	*	*	Time 6	
C337	hhmmNN	3	time-division rate	*	*	Period 7	
C338	hhmmNN	3	time-division rate	*	*	Period 8	
C339	hhmmNN	3	time-division rate	*	*	Period 9	
C33A	hhmmNN	3	time-division rate	*	*	Period 10	
C33B	hhmmNN	3	time-division rate	*	*	Period 11	
C33C	hhmmNN	3	time-division rate	*	*	Period 12	

Note:
The address of the device and the communication rate shall be changed,

and the communication protocol of the multi-function electric energy meter shall be in accordance with the DL/ T645-1997 <multifunction electric energy meter communication protocol.
When you change the communication parameters,1 Byte (right) + 3 Byte (password) is required to place the identification code. The default permissions and passwords are:00000000.
3 meter running status word 2 [C023] (1: reverse, 0: forward)

Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
total reactive direction	--	--	--	Total active power direction	--	--	--

2.4 DL/T 645-2007 communicating protocol

2.4.1 electric energy data

Identification code	data format	length	unit	read	write	Data item name
00010000	XXXXXX.XX	4	kWh	*		Positive active electric energy [total]
00010100	XXXXXX.XX	4	kWh	*		Forward active power [tip]
00010200	XXXXXX.XX	4	kWh	*		Positive active energy[peak]
00010300	XXXXXX.XX	4	kWh	*		Positive active power [flat]
00010400	XXXXXX.XX	4	kWh	*		Positive active energy[valley]
0001FF00		20	kWh	*		Forward active power packet
00020000	XXXXXX.XX	4	kWh	*		Reverse active power
00030000	XXXXXX.XX	4	kvarh	*		Forward reactive power
000400	XXXXXX.XX	4	kvar	*		reverse reactive energy

00			h			
00050000	XXXXXX.XX	4	kvarh	*		first-quadrant reactive power
00060000	XXXXXX.XX	4	kvarh	*		Second quadrant reactive power
00070000	XXXXXX.XX	4	kvarh	*		third quadrant reactive power
00080000	XXXXXX.XX	4	kvarh	*		fourth-quadrant reactive power
00010001	XXXXXX.XX	4	kWh	*		Active electricity [total] last month
00010101	XXXXXX.XX	4	kWh	*		Active electricity [tip] last month
00010201	XXXXXX.XX	4	kWh	*		last month active energy[peak]
00010301	XXXXXX.XX	4	kWh	*		Active electricity [flat] last month
00010401	XXXXXX.XX	4	kWh	*		last month active electric energy[valley]
0001FF01		20	kWh	*		last month active power data packet
00010002	XXXXXX.XX	4	kWh	*		Active electricity [total] last month
00010102	XXXXXX.XX	4	kWh	*		The last month was active [sharp].
00010202	XXXXXX.XX	4	kWh	*		last month active energy[peak]
00010302	XXXXXX.XX	4	kWh	*		Last month active energy[Ping]
00010402	XXXXXX.XX	4	kWh	*		Active electricity [valley] last month
0001FF02		20	kWh	*		Active power packet last month

2.4.2 variable data

Identification code	data format	length	unit	read	write	Data item name
02010100	XXX.X	2	V	*		voltage
02020100	XXX.XXX	3	A	*		current
02030000	XX.XXXX	3	kW	*		active power
02040000	XX.XXXX	3	kvar	*		reactive power
02050000	XX.XXXX	3	kVA	*		apparent output
02060000	X.XXX	2	0.001	*		power factor
02800002	XX.XX	2	Hz	*		frequency

2.4.3 parametric data

characteristic encoded	data format	length	unit	read	write	Data item name	
04000101	YYMMDDWW	4	Year, month, day, week	*	*	Date and week	This identity code is invalid when there is no duplicate rate function
04000102	hhmmss	3	Time and second	*	*	time	
04000B01	DDhh	2	daytime	*	*	Automatic meter reading date	
04000502	XXXX	2		*		Power meter operation status word 2 (see note)	
04000409	XXXXXX	3	imp/kWh	*		active pulse constant	
0400040a	XXXXXX	3	imp/kv	*		reactive pulse constant	

			arh				
04000401	NNNNNNNNNNNN	6		*	*	Communication address (data less than 247)	
04010001 (up to 36 bytes in length)	hhmmNN	3	time-division rate	*	*	Period 1 (start time default is 00:00)	The data encoding is not valid when there is no complex rate function.
	hhmmNN	3	time-division rate	*	*	Period 2	
	hhmmNN	3	time-division rate	*	*	Period 3	
	hhmmNN	3	time-division rate	*	*	Period 4	
	hhmmNN	3	time-division rate	*	*	Period 5	
	hhmmNN	3	time-division rate	*	*	Period 6	
	hhmmNN	3	time-division rate	*	*	Period 7	
	hhmmNN	3	time-division rate	*	*	Period 8	
	hhmmNN	3	time-division rate	*	*	Period 9	
	hhmmNN	3	time-division rate	*	*	Period 10	
	hhmmNN	3	time-division rate	*	*	Period 11	
	hhmmNN	3	time-division	*	*	Period 12	

			rate				

Note:

The communication address shall be written and the communication protocol of the multi-function electric energy meter shall be in accordance with the DL/ T645-2007 <multifunction electric energy meter communication protocol.

When you change the communication parameters, a 4 Byte (password) + 4 Byte (operator code) is required to place the identification code. The default password and operator code are:01010102020202.

3 meter running status word 2 [04000502] (1: reverse, 0: forward)

Bit15	Bit14	Bit13	Bit12	Bit11	Bit10	Bit9	Bit8
leave out	leave out	leave out	leave out	leave out	leave out	leave out	leave out
Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
reactive direction	leave out	leave out	leave out	active direction	leave out	leave out	leave out