1. Function Code = 0x04

Address (Register)	SDM230-Modbus Input Register Parameter				Modbus Protocol Start Address Hex	
	Description	Length (bytes)	Data Format	Units	Hi Byte	Lo Byte
30001	Line to neutral volts.	4	Float	V	00	00
30007	Current.	4	Float	A	00	06
30013	Active power.	4	Float	W	00	0C
30019	Apparent power	4	Float	VA	00	12
30025	Reactive power	4	Float	VAr	00	18
30031	Power factor (1)	4	Float	None	00	1E
30037	Phase angle.	4	Float	Degree	00	24
30071	Frequency	4	Float	Hz	00	46
30073	Import active energy	4	Float	kWh	00	48
30075	Export active energy	4	Float	kWh	00	4A
30077	Import reactive energy	4	Float	kVArh	00	4C
30079	Export reactive energy	4	Float	kVArh	00	4E
30085	Total system power demand (2)	4	Float	W	00	54
30087	Maximum total system power demand (2)	4	Float	W	00	56
30089	Current system positive power demand	4	Float	W	00	58
30091	Maximum system positive power demand	4	Float	W	00	5A
30093	Current system reverse power demand	4	Float	W	00	5C
30095	Maximum system reverse power demand	4	Float	W	00	5E
30259	Current demand.	4	Float	A	01	02
30265	Maximum current demand.	4	Float	A	01	08
30343	Total active energy	4	Float	kWh	01	56
30345	Total reactive energy	4	Float	kVArh	01	58
30385	Current resettable total active energy	4	Float	kWh	01	80
30387	Current resettable total reactive energy	4	Float	kVArh	01	82

Notes:

1. The power factor has its sign adjusted to indicate the direction of the current. Positive refers to forward current, negative refers to reverse current.
2. The power sum demand calculation is for import – export.

2. Function Code = 0x10/0x03

Address Register	Parameter	Modbus Protocol Start Address Hex		Valid range	Mode
		High	Low		

		Byte	Byte		
40013	Pulse output 1 Width	00	0C	Write relay on period in Milliseconds: 60, 100 or 200, default 100. **Data Format：float（length：4 byte）**	r/w
40087	Pulse1 Energy Type	00	56	Write MODBUS Protocol input parameter for pulse relay 1: 1=Import Wh; 2=Import and ExportWh; 4=Export Wh;**(default)** 5=Import VArh; 6=Import and Export VArh; 8=Export VArh. **Data Format：float（length：4 byte）**	r/w
461457	Reset	F0	10	00 00: Reset the Maximum demand 00 03: Reset the resettable energy **Length: 2 byte** **Data Format: Hex**	wo
462721	Demand interval , slide time, automatic scroll display interval (scroll Time)，Backlight time	F5	00	min-min-s-min scroll time=0：the display does not scroll automatically. Backlight time=0 Backlight always on **Data Format: BCD（length：4 byte）**	r/w
463761	Pulse 1 constant	F9	10	0000: 0.001kwh（kvarh）/imp（**default**） 0001: 0.01kwh（kvarh）/imp 0002: 0.1kwh（kvarh）/imp 0003: 1kwh（kvarh）/imp **Data Format：Hex（length：2 byte）**	r/w
463776	Measurement mode	F9	20	0001:mode 1(total = import) 0002:mode 2(total = import + export) （**default**） 0003:mode 3 (total = import - export) **Data Format：Hex（length：2 byte）**	r/w
463792	Running time	F9	30	Continuous working period--hour **Data Format：float（length：4 byte）**	r/w

Table 1：

SDM230-LORAWAN Active Uploading Parameters					
Index Number		Parameter	Unit	Data format	Length (Byte)
Decimalism	Hex				
0	00	Voltage	V	Float	4
1	01	Frequency	Hz	Float	4
2	02	Current	A	Float	4
3	03	Power factor	None	Float	4
4	04	Active power	W	Float	4
5	05	Reactive power	var	Float	4
6	06	Apparent power	VA	Float	4
7	07	Phase Angle	Degrees	Float	4
8	08	Maximum system power demand	W	Float	4
9	09	Maximum import power demand	W	Float	4
10	0A	Maximum export power demand	W	Float	4
11	0B	Maximum current demand	A	Float	4
12	0C	Import kwh	kWh	Float	4
13	0D	Export kwh	kWh	Float	4
14	0E	Total kwh	kWh	Float	4
15	0F	Import kvarh	kvarh	Float	4
16	10	Export kvarh	kvarh	Float	4
17	11	Total kvarh	kvarh	Float	4
18	12	Resettable total active energy	kWh	Float	4
19	13	Resettable total reactive energy	kvarh	Float	4

Example：If the register is set as:

00 01 02 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF，

there are 3 active upload parameters:

L1-N Voltage，L2-N Voltage，L3-N Voltage

Data Format：

Serial Number of the energy meter （4byte）	Number of active upload parameter (1byte)	The bytes number of sent data	Data1 (4byte)	Data 2 (4byte)	Data 3 (4byte)	CRC (2byte)
Integer, Big-endian	N	Represent bytes number of the following data, not including CRC （Fixed= 0x0C）	Format: Float, Big-endian	Format: Float, Big-endian	Format: Float, Big-endian	Little-endian

Note：

1) For active upload parameters, only 3 data can be uploaded at a time. If there are more than 3 parameters, the meter will be actively uploaded in batches (completed in each upload window. The operation method is: once the last uploading is successes, immediately upload the next data.
2) Sometimes, the meter will upload parameters in multiples. The number of active upload parameter (N) can help to check more clearly on which registers are uploaded.
   For example:
   NO.1: L1 voltage
   NO.2: L1 current
   NO.3: Total kWh, Total kVArh
   N=01 represent the uploading data of L1 Voltage, L2 Current, L3 kWh/KVArh
3) The active upload parameters are uploaded in the order specified when the active upload data type is set.