

1. Function Code = 0x04

Address (Register)	Input Register Parameter				Modbus Protocol Start Address Hex		3 ∅	3 ∅	1 ∅
	Description	Length (bytes)	Data Format	Units	Hi Byte	Lo Byte	4 W	3 W	2 W
30001	Phase 1 line to neutral volts.	4	Float	V	00	00	√	X	√
30003	Phase 2 line to neutral volts.	4	Float	V	00	02	√	X	X
30005	Phase 3 line to neutral volts.	4	Float	V	00	04	√	X	X
30007	Phase 1 current.	4	Float	A	00	06	√	√	√
30009	Phase 2 current.	4	Float	A	00	08	√	√	X
30011	Phase 3 current.	4	Float	A	00	0A	√	√	X
30013	Phase 1 active power.	4	Float	W	00	0C	√	X	√
30015	Phase 2 active power.	4	Float	W	00	0E	√	X	X
30017	Phase 3 active power.	4	Float	W	00	10	√	X	X
30019	Phase 1 apparent power.	4	Float	VA	00	12	√	X	√
30021	Phase 2 apparent power.	4	Float	VA	00	14	√	X	X
30023	Phase 3 apparent power.	4	Float	VA	00	16	√	X	X
30025	Phase 1 reactive power.	4	Float	VAr	00	18	√	X	√
30027	Phase 2 reactive power.	4	Float	VAr	00	1A	√	X	X
30029	Phase 3 reactive power.	4	Float	VAr	00	1C	√	X	X
30031	Phase 1 power factor (1).	4	Float	None	00	1E	√	X	√
30033	Phase 2 power factor (1).	4	Float	None	00	20	√	X	X
30035	Phase 3 power factor (1).	4	Float	None	00	22	√	X	X
30037	Phase 1 phase angle.	4	Float	Degrees	00	24	√	X	√
30039	Phase 2 phase angle.	4	Float	Degrees	00	26	√	X	X
30041	Phase 3 phase angle.	4	Float	Degrees	00	28	√	X	X
30043	Average line to neutral volts.	4	Float	V	00	2A	√	X	X
30047	Average line current.	4	Float	A	00	2E	√	√	√

30049	Sum of line currents.	4	Float	A	00	30	√	√	√
30053	Total system power.	4	Float	W	00	34	√	√	√
30057	Total system volt amps.	4	Float	VA	00	38	√	√	√
30061	Total system VAr.	4	Float	VAr	00	3C	√	√	√
30063	Total system power factor (1).	4	Float	None	00	3E	√	√	√
30067	Total system phase angle.	4	Float	Degrees	00	42	√	√	√
30071	Frequency of supply voltages.	4	Float	Hz	00	46	√	√	√
30073	Total Import kWh	4	Float	kWh	00	48	√	√	√
30075	Total Export kWh.	4	Float	kWh	00	4A	√	√	√
30077	Total Import kVArh	4	Float	kVArh	00	4C	√	√	√
30079	Total Export kVArh	4	Float	kVArh	00	4E	√	√	√
30081	Total VAh	4	Float	kVAh	00	50	√	√	√
30083	Ah	4	Float	Ah	00	52	√	√	√
30085	Total system power demand (2).	4	Float	W	00	54	√	√	√
30087	Maximum total system power demand (2).	4	Float	W	00	56	√	√	√
30101	Total system VA demand.	4	Float	VA	00	64	√	√	√
30103	Maximum total system VA demand.	4	Float	VA	00	66	√	√	√
30105	Neutral current demand.	4	Float	Amps	00	68	√	X	X
30107	Maximum neutral current demand.	4	Float	Amps	00	6A	√	X	X
30109	Total system reactive power demand. (2)	4	Float	VAr	00	6C	√	X	√
30111	Maximum total system reactive power demand(2)	4	Float	VAr	00	6E	√	X	√
30201	Line 1 to Line 2 volts.	4	Float	V	00	C8	√	√	X
30203	Line 2 to Line 3 volts.	4	Float	V	00	CA	√	√	X
30205	Line 3 to Line 1 volts.	4	Float	V	00	CC	√	√	X
30207	Average line to line volts.	4	Float	V	00	CE	√	√	X
30225	Neutral current.	4	Float	A	00	E0	√	X	X
30235	Phase 1 L/N volts THD	4	Float	%	00	EA	√	X	√
30237	Phase 2 L/N volts THD	4	Float	%	00	EC	√	X	X

30239	Phase 3 L/N volts THD	4	Float	%	00	EE	√	X	X
30241	Phase 1 Current THD	4	Float	%	00	F0	√	√	√
30243	Phase 2 Current THD	4	Float	%	00	F2	√	√	X
30245	Phase 3 Current THD	4	Float	%	00	F4	√	√	X
30249	Average line to neutral volts THD.	4	Float	%	00	F8	√	X	√
30251	Average line current THD.	4	Float	%	00	FA	√	√	√
30255	Total system power factor (1).	4	Float	Degrees	00	FE	√	√	√
30259	Phase 1 current demand.	4	Float	A	01	02	√	√	√
30261	Phase 2 current demand.	4	Float	A	01	04	√	√	X
30263	Phase 3 current demand.	4	Float	A	01	06	√	√	X
30265	Maximum phase 1 current demand.	4	Float	A	01	08	√	√	√
30267	Maximum phase 2 current demand.	4	Float	A	01	0A	√	√	X
30269	Maximum phase 3 current demand.	4	Float	A	01	0C	√	√	X
30335	Line 1 to line 2 volts THD.	4	Float	%	01	4E	√	√	X
30337	Line 2 to line 3 volts THD.	4	Float	%	01	50	√	√	X
30339	Line 3 to line 1 volts THD.	4	Float	%	01	52	√	√	X
30341	Average line to line volts THD.	4	Float	%	01	54	√	√	X
30343	Total kWh (3)	4	Float	kWh	01	56	√	√	√
30345	Total kVArh (3)	4	Float	kVArh	01	58	√	√	√
30347	L1 import kWh	4	Float	kWh	01	5A	√	√	√
30349	L2 import kWh	4	Float	kWh	01	5C	√	√	X
30351	L3 import kWh	4	Float	kWh	01	5E	√	√	X
30353	L1 export kWh	4	Float	kWh	01	60	√	√	√
30355	L2 export kWh	4	Float	kWh	01	62	√	√	X
30357	L3 export kWh	4	Float	kWh	01	64	√	√	X
30359	L1 total kWh	4	Float	kWh	01	66	√	√	√
30361	L2 total kWh	4	Float	kWh	01	68	√	√	X
30363	L3 total kWh	4	Float	kWh	01	6A	√	√	X

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30365	L1 import kVArh	4	Float	kVArh	01	6C	√	√	√
30367	L2 import kVArh	4	Float	kVArh	01	6E	√	√	X
30369	L3 import kVArh	4	Float	kVArh	01	70	√	√	X
30371	L1 export kVArh	4	Float	kVArh	01	72	√	√	√
30373	L2 export kVArh	4	Float	kVArh	01	74	√	√	X
30375	L3 export kVArh	4	Float	kVArh	01	76	√	√	X
30377	L1 total kVArh	4	Float	kVArh	01	78	√	√	√
30379	L2 total kVArh	4	Float	kVArh	01	7A	√	√	X
30381	L3 total kVArh	4	Float	kVArh	01	7C	√	√	X
30385	resettable total active energy	4	Float	kWh	01	80	√	√	√
30387	resettable total reactive energy	4	Float	kVArh	01	82	√	√	√
30389	resettable import active energy	4	Float	kWh	01	84	√	√	√
30391	resettable export active energy	4	Float	kWh	01	86	√	√	√
30393	resettable import reactive energy	4	Float	kVArh	01	88	√	√	√
30395	resettable export reactive energy	4	Float	kVArh	01	8A	√	√	√

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.
3. Total kWh / kVArh equals to Import + export.

2. Function Code = 0x10/0x03

Address Register	Parameter Number	Parameter	Modbus Protocol		Valid range	Mode
			Start Address Hex	High Byte		
40001	1	Demand Time	00	00	Read minutes into first demand calculation. When the demand time reaches the demand Period then the demand values are valid. Length : 4 byte Data Format : Float	ro

40003	2	Demand Period	00	02	<p>Write demand period: 0, 5,8, 10, 15, 20, 30 or 60 minutes, default 60. Setting the period to 0 will cause the demand to show the Current parameter value, and demand max to show the maximum parameter value since last demand reset.</p> <p>Length : 4 byte Data Format : Float</p>	r/w
40011	6	System Type	00	0A	<p>Write system type: 3p4w = 3, 3p3w = 2 & 1p2w= 1 Requires password, see parameter 13</p> <p>Length : 4 byte Data Format : Float</p>	r/w
40013	7	Pulse output 1 Width	00	0C	<p>Write relay on period in Milliseconds: 60, 100 or 200, default 200.</p> <p>Length : 4 byte Data Format : Float</p>	r/w
40015	8	Password Lock	00	0E	<p>Read password lock status: 0 = locked. 1 = unlocked.</p> <p>Length : 4 byte Data Format : Float</p>	ro
40023	12	Pulse 1 Divisor	00	16	<p>Write pulse divisor index: n = 1 to 6 1--0.01kwh/imp 2--0.1kwh/imp 3--1kwh/imp 4-10kwh/imp 5-100kwh/imp 6-1000kwh/imp</p> <p>Length : 4 byte Data Format : Float</p>	r/w
40025	13	Password	00	18	<p>Write password for access to protected registers. Default password is 1000.</p> <p>Length : 4 byte Data Format : Float</p>	r/w
40063	32	CT ratio	00	3E	<p>CT Ratio range:1~2000 CT Ratio= primary current /secondary current</p> <p>Length : 4 byte Data Format : Float</p> <p>Requires password, see parameter 13</p>	r/w

					(Non MID)	
40065	33	PT ratio	00	40	PT Ratio range:1~2000 PT ratio= primary voltage /secondary voltage Length : 4 byte Data Format : Float Requires password, see parameter 13 (Non MID)	r/w
40087	44	Pulse 1 Energy Type	00	56	Write MODBUS Protocol input parameter for Pulse out 1: 37 = total kwh or 39 = total kVarh, default 39. Length : 4 byte Data Format : Float	r/w
461457	30729	Reset	F0	10	00 00 : reset the Maximum demand 00 03: reset the resettable energy Length : 2 byte Data Format: Hex	wo

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Table1:

SDM630MCT-LORAWAN Active Upload Parameters					
Index Number		Parameter	Unit	Data format	Length (Byte)
Decimalism	Hex				
0	00	L1-N Voltage	V	Float	4
1	01	L2-N Voltage	V	Float	4
2	02	L3-N Voltage	V	Float	4
3	03	L1-2 Voltage	V	Float	4
4	04	L2-3 Voltage	V	Float	4
5	05	L3-1 Voltage	V	Float	4
6	06	Frequency	Hz	Float	4
7	07	L1 Current	A	Float	4
8	08	L2 Current	A	Float	4
9	09	L3 Current	A	Float	4
10	0A	Total Current	A	Float	4
11	0B	Neutral Current	A	Float	4
12	0C	L1 Power factor	None	Float	4
13	0D	L2 Power factor	None	Float	4
14	0E	L3 Power factor	None	Float	4
15	0F	Total Power factor	None	Float	4
16	10	L1 Active power	W	Float	4
17	11	L2 Active power	W	Float	4
18	12	L3 Active power	W	Float	4
19	13	Total Active power	W	Float	4
20	14	L1 Reactive power	var	Float	4
21	15	L2 Reactive power	var	Float	4
22	16	L3 Reactive power	var	Float	4
23	17	Total Reactive power	var	Float	4
24	18	L1 Apparent power	VA	Float	4
25	19	L2 apparent power	VA	Float	4
26	1A	L3 apparent power	VA	Float	4
27	1B	Total apparent power	VA	Float	4
28	1C	L1 Phase Angle	Degrees	Float	4
29	1D	L2 Phase Angle	Degrees	Float	4
30	1E	L3 Phase Angle	Degrees	Float	4
31	1F	System Phase Angle	Degrees	Float	4
32	20	Maximum total system power demand	W	Float	4
33	21	Maximum total system reactive power demand	var	Float	4
34	22	Maximum total system apparent power demand	VA	Float	4
35	23	Maximum L1 current demand	A	Float	4

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36	24	Maximum L2 current demand	A	Float	4
37	25	Maximum L3 current demand	A	Float	4
38	26	Maximum neutral current demand	A	Float	4
39	27	Phase 1 L/N volts THD	%	Float	4
40	28	Phase 2 L/N volts THD	%	Float	4
41	29	Phase 3 L/N volts THD	%	Float	4
42	2A	Phase 1 Current THD	%	Float	4
43	2B	Phase 2 Current THD	%	Float	4
44	2C	Phase 3 Current THD	%	Float	4
45	2D	Import Active Energy	kWh	Float	4
46	2E	Export Active Energy	kWh	Float	4
47	2F	Total kWh	kWh	Float	4
48	30	Import Reactive Energy	kvarh	Float	4
49	31	Export Reactive Energy	kvarh	Float	4
50	32	Total kvarh	kvarh	Float	4
51	33	Total kvah	kVAh	Float	4
52	34	L1 import kwh	kWh	Float	4
53	35	L2 import kwh	kWh	Float	4
54	36	L3 import kwh	kWh	Float	4
55	37	L1 export kwh	kWh	Float	4
56	38	L2 export kwh	kWh	Float	4
57	39	L3 export kwh	kWh	Float	4
58	3A	L1 total kwh	kWh	Float	4
59	3B	L2 total kwh	kWh	Float	4
60	3C	L3 total kwh	kWh	Float	4
61	3D	L1 import kvarh	kvarh	Float	4
62	3E	L2 import kvarh	kvarh	Float	4
63	3F	L3 import kvarh	kvarh	Float	4
64	40	L1 export kvarh	kvarh	Float	4
65	41	L2 export kvarh	kvarh	Float	4
66	42	L3 export kvarh	kvarh	Float	4
67	43	L1 total kvarh	kvarh	Float	4
68	44	L2 total kvarh	kvarh	Float	4
69	45	L3 total kvarh	kvarh	Float	4
70	46	Active Energy by algebraic sum method	kWh	Float	4
71	47	Reactive Energy by algebraic sum method	kvarh	Float	4
72	48	Resettable total active energy	kWh	Float	4
73	49	Resettable total reactive energy	kvarh	Float	4
74	4A	Resettable import active energy	kWh	Float	4
75	4B	Resettable export active energy	kWh	Float	4
76	4C	Resettable import reactive	kvarh	Float	4

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		energy			
77	4D	Resettable export reactive energy	kvarh	Float	4

Example: If the register is set as:

00 01 02 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 uploading 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 works successfully, the next data will upload immediately.
- 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, L2 voltage, L3 voltage,
NO.2: L1 current, L2 current, L3 current
NO.3: Total kWh, Total kVArh
N=01 represent the uploading data of L1 Voltage, L2 Voltage, L3 voltage
- 3) The active upload parameters are uploaded in the order specified when the active upload data type is set.