SDM72D-M Modbus protocol V1.0

Input Register，function code 04

Input registers are used to indicate the present values of the measured and calculated electrical quantities. Each parameter is held in two consecutive 16 big register. The following table details the 3X register address, and the values of the the address bytes within the message. A (*) in the column indicated the parameter is valid for the particular wiring system, Any parameter with a cross (X) will return the value zero. Each parameter is held in the 3X registers. Modbus Protocol function code 04 is used to access all parameters.

For example, to request: Amps 1 Start address = 0006
No.of registers = 0002
Amps 2 Start address = 0008
No. Of register = 0002

Each request for data must be restricted to 30 parameters or less. Exceeding the 30 parameter limit will cause a Modbus Protocol exception code to be returned.

Address (Register)	Input Register Parameter				Modbus Protocol Start Address Hex	
	Description	Length (bytes)	Data Format	Units	Hi Byte	Lo Byte
30001	Phase 1 line to neutral volts.	4	Float	V	00	00
30003	Phase 2 line to neutral volts.	4	Float	V	00	02
30005	Phase 3 line to neutral volts.	4	Float	V	00	04
30007	Phase 1 current.	4	Float	A	00	06
30009	Phase 2 current.	4	Float	A	00	08
30011	Phase 3 current.	4	Float	A	00	0A
30013	Phase 1 active power.	4	Float	W	00	0C
30015	Phase 2 active power.	4	Float	W	00	0E
30017	Phase 3 active power.	4	Float	W	00	10
30019	Phase 1 apparent power.	4	Float	VA	00	12
30021	Phase 2 apparent power.	4	Float	VA	00	14
30023	Phase 3 apparent power.	4	Float	VA	00	16
30025	Phase 1 reactive power.	4	Float	VAr	00	18
30027	Phase 2 reactive power.	4	Float	VAr	00	1A
30029	Phase 3 reactive power.	4	Float	VAr	00	1C
30031	Phase 1 power factor (1).	4	Float	None	00	1E
30033	Phase 2 power factor (1).	4	Float	None	00	20
30035	Phase 3 power factor (1).	4	Float	None	00	22
30043	Average line to neutral volts.	4	Float	V	00	2A
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
30071	Frequency of supply voltages.	4	Float	Hz	00	46
30073	Import active energy	4	Float	kWh	00	48
30075	Export active energy	4	Float	kWh	00	4A
30201	Line 1 to Line 2 volts.	4	Float	V	00	C8
30203	Line 2 to Line 3 volts.	4	Float	V	00	CA
30205	Line 3 to Line 1 volts.	4	Float	V	00	CC
30207	Average line to line volts.	4	Float	V	00	CE
30225	Neutral current.	4	Float	A	00	E0
30343	Total active Energy (2)	4	Float	kWh	01	56
30345	Total reactive energy	4	Float	kVArh	01	58
30385	resettable total active energy	4	Float	kWh	01	80
30389	resettable import active energy	4	Float	kWh	01	84
30391	resettable export active energy	4	Float	kWh	01	86
30397	Net kWh (Import - Export)	4	Float	kWh	01	8C
31281	Total import active power	4	Float	W	05	00
31283	Total export active power	4	Float	W	05	02

Instruction:

(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) ： Total active energy equals to import + export.

Holding Register， function code 03 / 10

Holding register are used to store and display instrument configuration settings. All holding registers not listed in the table below should be considered as reserved for manufacturer use and no attempt should be made to modify their values.

The holding register parameters may be viewed or changed using the Modbus Protocol. Each parameter is held in two consecutive 4X registers. Modbus Protocol Function Code 03 is used to read the parameter and Function code 10 is used to write. Write only to one parameter per massage.

Address Register	Parameter	Modbus Protocol Start Address Hex	Valid range	Mode

		High Byte	High Byte		
40011	System Type	00	0A	Write system type: 1 = 1P2W; 3 = 3P4W,(default); **Length : 4 byte** **Data Format : Float** (KPPA is asked)	r/w
40013	Pulse width	00	OC	Range：60, 100, 200，unit: ms，default 100. Note：If pulse output =1000imp/kWh，then pulse width is fixed at 35ms，and cannot be adjusted. **Length : 4 byte** **Data Format : Float**	r/w
40015	Key Parameter Programming Authorization (KPPA)	00	0E	Read: to get the status of the KPPA 0 = not authorized；1 = authorized Write the correct password to get KPPA, enable to program key parameters. **Length : 4 byte** **Data Format : Float**	r/w
40019	Parity and stop bit	00	12	Write the network port parity/stop bits for MODBUS Protocol, where: 0 = One stop bit and no parity, default. 1 = One stop bit and even parity. 2 = One stop bit and odd parity.3 = Two stop bits and no parity. **Length : 4 byte** **Data Format : Float**	r/w
40021	Modbus address	00	14	Write the network port node Address: 1 to 247 for MODBUS Protocol, default 1. **Length : 4 byte** **Data Format : Float**	r/w
40023	Pulse constant	00	16	Option: 0~3，默认0 0 : 1000 imp/kWh 1 : 100 imp/kWh 2： 10 imp/kWh 3 ： 1 imp/kWh Note: If pulse output =1000imp/kWh，then pulse width is fixed at 35ms，and cannot be adjusted. **Length : 4 byte** **Data Format : Float**	r/w
40025	Password	00	18	Read: to get the password of the meter Write: to program the new password of the meter Default 1000 **Length : 4 byte** **Data Format : Float**	r/w
40029	Network Baud Rate	00	1C	Write the network port baud rate for MODBUS Protocol, where: 0 = 2400 baud. 1 = 4800 baud.	r/w

				2 = 9600 baud, default. 3 = 19200 baud **Length : 4 byte** **Data Format : Float**	
40057	Current direction	00	38	Default 0 0 = L1Frd，L2Frd，L3Frd 7 = L1 Rev，L2 Rev，L3 Rev **Length : 4 byte** **Data Format : Float**	r/w
40059	Automatic Scroll Display Time	00	3A	Default 0，second Range 0~60 **Length : 4 byte** **Data Format : Float**	r/w
40061	Backlit time	00	3C	Default 60, min Range 0~121，0 means backlit always on ，121 means backlit always off **Length : 4byte** **Data Format : Float**	r/w
40087	Pulse 1 Energy Type	00	56	Pulse 1 Energy Type： 1: import active energy 2: total active energy, (default) 4: export active energy **Length : 4 byte** **Data Format : Float**	r/w
461457	Reset historical data	F0	10	**00 03 = reset energy info** **Length : 2 byte** **Data Format: Hex**	wo
464513	Serial number	FC	00	Serial number **Length : 4 byte** **Data Format : unsigned int32** **Note: Only read**	ro
464515	Meter code	FC	02	Meter code SDM72D-M= 00 89 **Length : 2 byte** **Data Format : Hex** **Note: Only read**	ro