

Inverter unit real-time data

Order	Register Address	Data Type	What the data means	Number of bytes	R/W
0x03	0	Status word 0	Inverter state	2	R
0x03	1	Status word 1		2	R
0x03	2	Status word 2	Switch Status	2	R
0x03	3	Status word 3		2	R
0x03	4	Status word 4	Grid status	2	R
0x03	5	Status word 5	Output Status	2	R
0x03	6	Parameter 0	Working Mode	2	R/W
0x03	7	Parameter 1	0	2	R/W
0x03	8	Parameter 2	Photovoltaic mode	2	R/W
0x03	9	Parameter 3	Grid-connected power	2	R/W
0x03	10	Parameter 4		2	R/W
0x03	11	Parameter 5	DC bus reference voltage	2	R/W
0x03	12	Parameter 6	Battery reference voltage	2	R/W
0x03	13	Parameter 7		2	R/W
0x03	14	Parameter 8		2	R/W
0x03	15	Parameter 9	Power on/off command	2	R/W
0x03	16	Parameter 10		2	R/W
0x03	17	Parameter 11		2	R/W
0x03	18	Command word 0		2	R/W
0x03	19	Command word 1		2	R/W
0x03	20	Command word 2	FW software BOOT version number	2	R/W
0x03	21	Command word 3	FW software version low 8 digit minor	2	R/W
0x03	22	Parameter 12	Preform channel 0	2	R/W
0x03	23	Parameter 13	Preform channel 1	2	R/W
0x03	24	Parameter 14	Preform channel 2	2	R/W
0x03	25	Parameter 15	Preform channel 3	2	R/W
0x03	26	Data 0	Inverter voltage A	2	R
0x03	27	Data 1	Inverter voltage B	2	R
0x03	28	Data 2	Inverter voltage C	2	R
0x03	29	Data 3	Inverter current A	2	R
0x03	30	Data 4	Inverter current B	2	R
0x03	31	Data 5	Inverter current C	2	R
0x03	32	Data 6	Grid voltage A	2	R

0x03	33	Data 7	Grid voltage B	2	R
0x03	34	Data 8	Grid voltage C	2	R
0x03	35	Data 9	Grid current A	2	R
0x03	36	Data 10	Grid current B	2	R
0x03	37	Data 11	Grid current C	2	R
0x03	38	Data 12	Load voltage A	2	R
0x03	39	Data 13	Load voltage B	2	R
0x03	40	Data 14	Load voltage C	2	R
0x03	41	Data 15	Load current A	2	R
0x03	42	Data 16	Load current B	2	R
0x03	43	Data 17	Load current C	2	R
0x03	44	Data 18	Diesel generator voltage A	2	R
0x03	45	Data 19	Diesel generator voltage B	2	R
0x03	46	Data 20	Diesel generator voltage C	2	R
0x03	47	Data 21	Diesel generator current A	2	R
0x03	48	Data 22	Diesel generator current B	2	R
0x03	49	Data 23	Diesel generator current C	2	R
0x03	50	Data 24	Positive bus voltage	2	R
0x03	51	Data 25	Negative bus voltage	2	R
0x03	52	Data 26	Inverter frequency	2	R
0x03	53	Data 27	Grid frequency	2	R
0x03	54	Data 28	Diesel generator output frequency	2	R
0x03	55	Data 29		2	R
0x03	56	Data 30	Maximum temperature	2	R
0x03	57	Data 31	Inverter working stage	2	R
0x03	58	Data 32	External CT power A	2	R
0x03	59	Data 33	External CT power B	2	R
0x03	60	Data 34	External CT power C	2	R
0x03	61	Data 35	External CT current A	2	R
0x03	62	Data 36	External CT current B	2	R
0x03	63	Data 37	External CT current C	2	R
0x03	64	Data 38	Unbalanced current A	2	R
0x03	65	Data 39	Inverter active power A	2	R
0x03	66	Data 40	Inverter active power B	2	R
0x03	67	Data 41	Inverter active power C	2	R

0x03	68	Data 42	Inverter reactive power A	2	R
0x03	69	Data 43	Inverter reactive power B	2	R
0x03	70	Data 44	Inverter reactive power C	2	R
0x03	71	Data 45	UPS active power A	2	R
0x03	72	Data 46	UPS active power B	2	R
0x03	73	Data 47	UPS active power C	2	R
0x03	74	Data 48	SMARTLOAD active power A	2	R
0x03	75	Data 49	SMARTLOAD active power B	2	R
0x03	76	Data 50	SMARTLOAD active power C	2	R
0x03	77	Data 51	Grid active power A	2	R
0x03	78	Data 52	Grid active power B	2	R
0x03	79	Data 53	Grid active power C	2	R
0x03	80	Data 54	Grid reactive power A	2	R
0x03	81	Data 55	Grid reactive power B	2	R
0x03	82	Data 56	Grid reactive power C	2	R
0x03	83	Data 57	Diesel generator active power	2	R
0x03	84	Data 58	Diesel generator active power	2	R
0x03	85	Data 59	Diesel generator active power	2	R
0x03	86	Data 60	Load active power A	2	R
0x03	87	Data 61	Load active power B	2	R
0x03	88	Data 62	Load active power C	2	R
0x03	89	Data 63	Software version 16-bit large v	2	R
0x03	90	Module online status		2	R

**DC unit real-time data**

Order	Register Address	Data Type	What the data means	Number of bytes	R/W
0x03	2000	Status word 0	Bus status	2	R
0x03	2001	Status word 1		2	R
0x03	2002	Status word 2	Battery Status	2	R
0x03	2003	Status word 3	Running status	2	R
0x03	2004	Status word 4	Photovoltaic status	2	R
0x03	2005	Status word 5	Fault status word	2	R
0x03	2006	Parameter 0	Battery working mode	2	R/W
0x03	2007	Parameter 1	Photovoltaic mode	2	R/W
0x03	2008	Parameter 2	Photovoltaic parallel control w	2	R/W

0x03	2009	Parameter 3	BMS maximum charging current	2	R/W
0x03	2010	Parameter 4	BMS maximum discharge current	2	R/W
0x03	2011	Parameter 5	Bus reference voltage	2	R/W
0x03	2012	Parameter 6	Battery reference voltage	2	R/W
0x03	2013	Parameter 7	DC control word	2	R/W
0x03	2014	Parameter 8	BMS Status/BMS SOC	2	R/W
0x03	2015	Parameter 9	Power on/off command	2	R/W
0x03	2016	Parameter 10	BMS charging maximum voltage	2	R/W
0x03	2017	Parameter 11	BMS minimum discharge voltage	2	R/W
0x03	2018	Command word 0	Record Clearance	2	R/W
0x03	2019	Command word 1	HMI communication address	2	R/W
0x03	2020	Command word 2	Record page number	2	R/W
0x03	2021	Command word 3	Restore factory settings and T1	2	R/W
0x03	2022	Parameter 12	Preform channel 0	2	R/W
0x03	2023	Parameter 13	Preform channel 1	2	R/W
0x03	2024	Parameter 14	Preform channel 2	2	R/W
0x03	2025	Parameter 15	Preform channel 3	2	R/W
0x03	2026	Data 0	Battery voltage	2	R
0x03	2027	Data 1	Battery Current	2	R
0x03	2028	Data 2	Photovoltaic 1 voltage	2	R
0x03	2029	Data 3	Photovoltaic 1 current	2	R
0x03	2030	Data 4	Photovoltaic 2 voltage	2	R
0x03	2031	Data 5	Photovoltaic 2 current	2	R
0x03	2032	Data 6	Bus voltage	2	R
0x03	2033	Data 7	Positive bus voltage	2	R
0x03	2034	Data 8	Buck voltage	2	R
0x03	2035	Data 9	Buck current	2	R
0x03	2036	Data 10	Battery power	2	R
0x03	2037	Data 11	Photovoltaic 1 power	2	R
0x03	2038	Data 12	Photovoltaic 2 power	2	R
0x03	2039	Data 13	Battery SOC	2	R
0x03	2040	Data 14	Transformer current	2	R
0x03	2041	Data 15	Low voltage DC voltage	2	R

0x03	2042	Data 16		2	R
0x03	2043	Data 17	Substrate temperature 1	2	R
0x03	2044	Data 18	Substrate temperature 2	2	R
0x03	2045	Data 19	Substrate temperature 3	2	R
0x03	2046	Data 20	Substrate temperature 4	2	R
0x03	2047	Data 21	Radiator temperature 1	2	R
0x03	2048	Data 22	Radiator temperature 2	2	R
0x03	2049	Data 23	Radiator temperature 3	2	R
0x03	2050	Data 24	Radiator temperature 4	2	R
0x03	2051	Data 25	T1 test logo	2	R
0x03	2052	Data 26		2	R
0x03	2053	Data 27	PV1Working stage	2	R
0x03	2054	Data 28	PV2 working stage	2	R
0x03	2055	Data 29	Battery temperature	2	R
0x03	2056	Data 30	Maximum temperature	2	R
0x03	2057	Data 31	Battery working stage	2	R
0x03	2058	Data 32	Machine operating status	2	R
0x03	2059	Data 33	Leakage Current	2	R
0x03	2060	Data 34	Insulation resistance	2	R
0x03	2061	Data 35	Alarm status word 1	2	R
0x03	2062	Data 36	Alarm status word 2	2	R
0x03	2063	Data 37	Fault status word 1	2	R
0x03	2064	Data 38	Fault status word 2	2	R
0x03	2065	Data 39	Photovoltaic power generation on the day	2	R
0x03	2066	Data 40	Total photovoltaic power generation	2	R
0x03	2067	Data 41	Battery charge level for the day	2	R
0x03	2068	Data 42		2	R
0x03	2069	Data 43	Total battery charge	2	R
0x03	2070	Data 44		2	R
0x03	2071	Data 45	Battery discharge on the day	2	R
0x03	2072	Data 46	Total battery discharge	2	R
0x03	2073	Data 47		2	R
0x03	2074	Data 48	Grid purchased electricity on the day	2	R
0x03	2075	Data 49	Total power grid purchase electricity	2	R
0x03	2076	Data 50		2	R

0x03	2077	Data 51	er grid sold electricity on t	2	R
0x03	2078	Data 52	total power grid sold electrici	2	R
0x03	2079	Data 53		2	R
0x03	2080	Data 54	ad power consumption on the d	2	R
0x03	2081	Data 55	al load total power consumpt	2	R
0x03	2082	Data 56		2	R
0x03	2083	Data 57		2	R
0x03	2084	Data 58		2	R
0x03	2085	Data 59		2	R
0x03	2086	Data 60		2	R
0x03	2087	Data 61	oftware BOOT version (lower 8	2	R
0x03	2088	Data 62	ware version low 8 digit minc	2	R
0x03	2089	Data 63	oftware version 16-bit large	2	R
0x03	2090	file online status		2	R



0,1	V		UINT16
0,1	V		UINT16
0,01	A		UINT16
0,01	A		UINT16
0,01	A		UINT16
0,1	V		UINT16
0,1	V		UINT16
0,1	V		UINT16
0,01	A		UINT16
0,01	A		UINT16
0,01	A		UINT16
0,1	V		UINT16
0,1	V		UINT16
0,1	V		UINT16
0,01	A		UINT16
0,01	A		UINT16
0,01	A		UINT16
0,1	V		UINT16
0,1	V		UINT16
0,01	Hz		INT16
0,01	Hz		INT16
0,01	Hz		INT16
0,1	° C		UINT16
			UINT16
0,01	A		UINT16
0,01	A		UINT16
0,01	A		UINT16
0,01	A		UINT16
0,01	A		UINT16
0,01	A		UINT16
0,01	A		UINT16
1	W		INT16
1	W		INT16
1	W		INT16

bit0





		16=Already T1 tested	
			UINT16
			UINT16
0,1	°C		UINT16
0,1	°C		UINT16
			UINT16
		Table 10	UINT16
		See fault information table	UINT16
			UINT16
			UINT16
			UINT16
0,1	kW		UINT16
0,1	kW	High 16-digit	UINT16
	kW	Low 16-digit	UINT16
0,1	kW		UINT16
0,1	kW	High 16-digit	UINT16
	kW	Low 16-digit	UINT16
0,1	kW		UINT16
0,1	kW	High 16-digit	UINT16
	kW	Low 16-digit	UINT16
0,1	kW		UINT16
0,1	kW	High 16-digit	UINT16
	kW	Low 16-digit	UINT16

bit9
bit8
bit7
bit6
bit5
bit4
bit3
bit2
bit1
bit0

0,1	kW		UINT16
0,1	kW	High 16-digit	UINT16
	kW	Low 16-digit	UINT16
0,1	kW		UINT16
0,1	kW	High 16-digit	UINT16
	kW	Low 16-digit	UINT16
			UINT16
			UINT16
			UINT16

Table 2-1 Operation mode	Table 1-1: Inverter status			Ta
Standby		1	0	
DC voltage source	bit15			bit15
AC voltage source	bit14			bit14
	bit13			bit13
Power Control	bit12	Bus voltage out of r	For debug	bit12
	bit11	Slow start, not comp	For debug	bit11
Time-based power control	bit10	Bus voltage out of r	For debug	bit10
PQ Run	bit9			bit9
Automatic on-grid and off-grid s	bit8			bit8
	bit7	Self-test failed		bit7
Automatic on-grid and off-grid s	bit6			bit6
	bit5	Phase lock abnormality		bit5
	bit4	Over temperature		bit4
	bit3	AC hardware overcurrent		bit3
	bit2	AC software overcurrent		bit2
	bit1	Busbar overvoltage		bit1
	bit0	Abnormal load voltage		bit0

Table 2-2 Power on/off commands	Table 1-5: Grid status			T
1		1	0	
	bit15	Shutdown	Power on	bit15
	bit14			bit14
	bit13	Anti-islanding frequ	For debug	bit13
	bit12			bit12
	bit11			bit11
	bit10			bit10
bit9-bit8: 1 bypass start 2 bypass shutdown	bit9			bit9
	bit8	Quick check abnormality		bit8
	bit7			bit7
	bit6	Abnormal voltage of phase C		bit6
bit5-bit4: 1 unbalanced power on 2 unbalanced power off	bit5	Abnormal voltage of phase B		bit5
	bit4	Abnormal voltage of phase A		bit4
	bit3			bit3
	bit2			bit2
bit1-bit0: 1 inverter on 2	bit1			bit1

inverter off

bit0			bit0
------	--	--	------

e 4-1 Battery operation mode	Table 1-1: Bus status			Tal
Standby		1	0	
Power Mode	bit15			bit15
High voltage regulation mode	bit14			bit14
Low voltage regulation mode	bit13			bit13
	bit12			bit12
	bit11			bit11
	bit10			bit10
	bit9			bit9
	bit8			bit8
e-2 Photovoltaic operation mode	bit7			bit7

Standby	bit6			bit6
PV 1 operation mode	bit5	Bus undervoltage (slow)		bit5
PV 2 operation mode	bit4	Busbar overvoltage (slow)		bit4
Photovoltaic 1, 2 operation mode	bit3			bit3
	bit2			bit2
	bit1	Bus undervoltage (fast)		bit1
	bit0	Busbar overvoltage (fast)		bit0

Power on/off commands	Table 1-5: Photovoltaic status			Table
1		1	0	
	bit15			bit15
	bit14			bit14
	bit13			bit13
	bit12	Photovoltaic 2 overvoltage		bit12
	bit11			bit11
	bit10	Photovoltaic 2 software overc		bit10
bit9-bit8: 1: PV 2 on 2: PV 2 off	bit9			bit9
	bit8	PV 1 undervoltage		bit8
	bit7			bit7
	bit6			bit6
bit5-bit4: 1: PV 1 on 2: PV 1 off	bit5			bit5
	bit4	Photovoltaic 1 overvoltage		bit4
	bit3	Photovoltaic hardware current		bit3
	bit2	Photovoltaic 1 software overcurrent		bit2
bit1-bit0: 1: Battery powered on 2: Battery powered off	bit1			bit1
	bit0	PV 1 undervoltage		bit0

Machine operation status	Table 1-5: SOCstate		
		1	0
reserve	bit15	Charging Enable	
reserve	bit14	Discharge Enable	
reserve	bit13		
reserve	bit12		
reserve	bit11		
reserve	bit10		

reserve	bit9		
reserve	bit8	Communication with BMS is normal	
0 = Standby 1 = Self-Test 2 = normal 3 = Alerts 4 = Fault 5 = Shutdown	bit7	SOC value	
	bit6		
	bit5		
	bit4		
	bit3		
	bit2		
	bit1		
	bit0		



Table 1-3: Switchesstate

1	0
---	---

Grid relay closes and supplies power

Inverter voltage source 10 Stages

Inverter current source 30 stages

Large pressure difference For debugging

Oil engine relay closes and supplies power

--	--

smartload on	off
--------------	-----

--	--

--	--

--	--

--	--

--	--

--	--

Unbalanced operation For debugging

Unbalanced operation For debugging

Unbalanced operation For debugging

Table 1-6: Outputstate

1	0
---	---

--	--

Communication logo For debugging

Communication logo For debugging

Communication logo For debugging

Large difference 1 For debugging

Large difference For debugging

Big difference For debugging

Large frequency difference For debugging

Difference 1 For debugging

Frequency difference For debugging

Output undervoltage For debugging

--	--

--	--

Abnormal output amplitude For debugging

Abnormal output amplitude For debugging

Abnormal output freq	For debugging
----------------------	---------------

Table 1-3: Batteriesstate	
1	0
Equalizing	
DC switch available	For debugging
Buck software overcurrent	
Busbar low	For debugging

Voltage bus overvoltage	
Busbar can work	For debugging
Hardware overcurrent	
Battery software overcurrent	
Battery overvoltage	
Battery undervoltage	

Table 1-4: Operationstate

1	0

The battery enters the operation stage

Battery enters preparation stage

For debugging	
For debugging	
For debugging	
DC start-up completed	
DC starting	
Photovoltaic 2 enters the operation stage	
Photovoltaic 1 enters the operation stage	