Marketer interface – ModBus specifications

# **TESVOLT ENERGY MANAGER**



## CONTENTS

1	Introduction	3
2	Modbus specifications	4
3	List of abbreviations	6
4	Legal notice	7

## **1 INTRODUCTION**

The TESVOLT Energy Manager has an external interface in the form of a Modbus/TCP server. This interface makes it possible to read relevant data from the TESVOLT Energy Manager and also to control it. The interface is basically designed as:

- A direct marketer interface to meet EEG requirements, in particular to control the PV installation and to read out the system parameters relevant for direct marketing.
- A flexibility trading interface for participation in exchange trading based on the available flexibility of the battery: here the interface allows the user to control the PV installation and battery storage system components and to specify a target value for the grid connection point.

To find the right control variant, please consult your trading company.

## 2 MODBUS SPECIFICATIONS

ADDRESS	REGISTRY	MODBUS TYPE	UNIT	DATA TYPE	ACCESS RIGHTS	DESCRIPTION
0	1	Holding Register	W	integer	R/W	Maximum Power Value (Nominal Power) PV of virtual power plant (Low-Word)
1	2	Holding Register	W	integer	R/W	Maximum Power Value (Nominal Power) PV of virtual power plant (High-Word)
2	3	Holding Register		integer	R/W	"Watchdog register (Server -> Controller) During a curtailment the watchdog signal should be written with a new (not fully defined) value about every minute. After 5 minutes without a new value will the curtail signal no longer be respected and the curtailment will be stopped."
5	6	Holding Register	W	integer	R/W	Nominal Power at mains connection of virtual power plant (Low-Word)
6	7	Holding Register	W	integer	R/W	Nominal Power at mains connection of virtual power plant (High-Word)
7	8	Holding Register		integer	R/W	"Watchdog register (Server -> Controller) During a curtailment the watchdog signal should be written with a new (not fully de- fined) value about every minute. After 5 minutes without a new value will the control signal no longer be respected and the local control will take over."
10	11	Holding Register	W	integer	R/W	Nominal Power of Battery Storage of virtual power plant (Low-Word)
11	12	Holding Register	W	integer	R/W	Nominal Power of Battery Storage of virtual power plant (High-Word)
12	13	Holding Register		integer	R/W	"Watchdog register (Server -> Controller) During a curtailment the watchdog signal should be written with a new (not fully de- fined) value about every minute. After 5 minutes without a new value will the control signal no longer be respected and the local control will take over."
15	16	Holding Register		integer	R/W	Power control for the mains connection or battery is specified by the marketer (0 = inactive [local control operating], 1 = active [desired value is set by control of the marketer, the desired power value is set according to registry entry 17])
16	17	Holding Register		integer	R/W	Power control active for: 1 = mains connection, 2 = battery storage
	1		14/	· .		
			VV	integer	К	Instantaneous Power of mains connection (Low-Word)
	2		VV	integer	R	Instantaneous Power of mains connection (High-Word)
3	4	Input Register	W	integer	R	Maximum Power Value (Nominal Power) grid operator (EISMAN) (Low-Word)
4	5	Input Register	W	integer	R	Maximum Power Value (Nominal Power) grid operator (EISMAN) (High-Word)
5	6	Input Register	W	integer	R	Instantaneous Power of PV (Low-Word)
6	7	Input Register	W	integer	R	Instantaneous Power of PV (High-Word)
7	8	Input Register	W	integer	R	Instantaneous Power of self-consumption (Low-Word)
8	9	Input Register	W	integer	R	Instantaneous Power of self-consumption (High-Word)
9	10	Input Register	%	float	R	state of charge of the battery (Low-Word)
10	11	Input Register	%	float	R	state of charge of the battery (High-Word)
11	12	Input Register	W	integer	R	charge/discharge power of the battery storage (Low-Word)

ADDRESS	REGISTRY	MODBUS TYPE	UNIT	DATA TYPE	ACCESS RIGHTS	DESCRIPTION
12	13	Input Register	W	integer	R	charge/discharge power of the battery storage (High-Word)
20	21	Input Register	W	integer	R	Mirrored Desired Value for the PV (Low-Word)
21	22	Input Register	W	integer	R	Mirrored Desired Value for the PV (High-Word)
22	23	Input Register	W	integer	R	Mirrored Desired Value for the Power of the mains connection (Low-Word)
23	24	Input Register	W	integer	R	Mirrored Desired Value for the Power of the mains connection (High-Word)
24	25	Input Register		integer	R	Mirrored Value for the power control of the mains connection locally (0) or the marketer (1)
25	26	Input Register	W	integer	R	Mirrored Desired Value for the battery storage (Low-Word)
26	27	Input Register	W	integer	R	Mirrored Desired Value for the battery storage (High-Word)
30	31	Input Register	W	integer	R	Power of the PV plant (Low-Word)
31	32	Input Register	W	integer	R	Power of the PV plant (High-Word)
32	33	Input Register	W	integer	R	Possible Maximum Power for Charging (Low-Word)
33	34	Input Register	W	integer	R	Possible Maximum Power for Charging (High-Word)
34	35	Input Register	W	integer	R	Possible Maximum Power for Discharging (Low-Word)
35	36	Input Register	W	integer	R	Possible Maximum Power for Discharging (High-Word)
36	37	Input Register	Wh	integer	R	Storage Capacity of the Battery Storage (Low-Word)
37	38	Input Register	Wh	integer	R	Storage Capacity of the Battery Storage (High-Word)
100	101	Input Register	-	integer	R	<b>0x0000</b> - no error
						<b>0x0001</b> - consolidated system error for the PV (system error for PV can mean for example, that the PV is currently not operable or the AS IS data acquiration is malfunctioning - Cause is likely a communication error of the inverter)
						<b>0x0002</b> - consolidated system error for the battery storage (system error for the battery means that the battery is currently not operable - Cause is likely a communication error of the inverter)

0x0004 - error in activity recording of the mains connection

0x0008 - error in activity recording of the PV

0x0010 - error in activity recording of the self-consumption

0x0020 - error in activity recording of the SOC (state of charge of the battery)



#### NOTE: Endianness

For a single 16 bit register the standard Modbus Endianess (big.) applies. For register combinations (32 bit values) the table above explicitly states which register contains the low and which the high word (see column "description").

## **3 LEGAL NOTICE**

TESVOLT Energy Manager Marketer interface – ModBus specifications Last revised: 03/2025 Revision: H.01 Applies to TESVOLT Energy Manager version 2.0 or higher Subject to technical changes.

### **TESVOLT AG**

Am Heideberg 31 06886 Lutherstadt Wittenberg Germany

#### TESVOLT Service Line +49 (0) 3491 8797-200

service@tesvolt.com www.tesvolt.com

#### Legal notice on use of the contents

The information contained in these documents is the property of TESVOLT AG. It may not be published in whole or in part without written permission from TESVOLT AG.

www.tesvolt.com