

# Ai-Logger

## Modbus TCP



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# 1 Brief introduction

The Ai-logger communicates with all inverters via Modbus RTU. The Ai-logger has all data and information for inverters. The Ai-logger can only be used as a Modbus TCP slave. Third party devices can only serve as Modbus master. Third party devices read every inverter's data from the Ai-logger. Applicable to software versions 003R or above.

## Modbus TCP port:

Default 9999 (support customizable port)

Selected port 502

## Slave ID:

two methods of implementing

**Method 1:** 239 (Inverter 4X register read and write operations are not supported at this time).

**Method 2:** Modbus 485 RTU address, only for reading and writing 3X or 4X register data of the inverter, supported by software version 006R or above.

## Implemented Modbus functions (only these function codes are allowed):

- 03 (Read N Holding Registers) to read one or multiple 16 bit words (Only for inverter 4X registers, supported by software version 006R or above).
- 04 (Read N Input Registers) to read one or multiple 16 bit words.
- 06 (Write 1 Register) to write one 16 bit word (Whichever method you use, these control data are valid for all inverters, add inverter 4X register write function, supported by software version 006R or above).
- 10 (Write N registers) to write one 16 bit word (Inverter 4X registers only, supported by software version 006R or above).

In order to use the inverter 4X register read/write function properly, all port inverters must be scanned, even if one inverter is connected to each port.

## Set the Modbus TCP port number method:

The screenshot shows the 'Network parameters' configuration page in the Ai-Logger 1000 web interface. The page has a purple header with 'Ai-Logger 1000' and 'Advanced user' text. A sidebar on the left contains navigation options: Overview, Device, System settings, User settings, Communication settings, Network settings, RS485 settings, Energy scheduling, and Maintain. The main content area is titled 'Network parameters' and has two tabs: 'Ethernet settings' (selected) and 'WiFi settings'. Under 'Ethernet settings', there is a 'Modbus TCP Port' section with two radio button options: 'Standard Port :502' (selected) and 'User-define Port: [input field] 1024-20000'. A 'Submit' button is located below the options.

After the user sets new port number, click submit button and wait for 10 seconds for the new port number to take effect.

## 2 Protocol Content

- The input register map contains all inverter data.
- The input register tab(registers 3xxxx, function code 04) is used only for read inverter running data.

### 2.1 Weather station data mapping table

No.	map_reg_start	device	map_reg_end
1	986	Sensor 1	992
2	993	Sensor 2	999

- Sensor 1

ADDR(DEC)	Description/number code	Type	Unit	Gain	Access
986	Wind speed: Min:0, Max:6000	U16	m/s	-	RO
987	Temperature compensated Irradiance Min:0; Max:16000	U16	Watt/m2	0.1	RO
988	Cell temperature. Min:-550; Max:1250	S16	°C	0.1	RO
989	Ext. temp. 1 as 'sign value' Min:-550;Max:1250	S16	°C	0.1	RO
990	Ext. temp. 2 as 'sign value' Min:-550;Max:1250	S16	°C	0.1	RO
991	External relative humidity Min:0; Max:100	U16	%	-	RO
992	Wind direction. Min:0; Max:359	U16	°	-	RO

- Sensor 2

ADDR(DEC)	Description/number code	Type	Unit	Gain	Access
993	Wind speed: Min:0, Max:6000	U16	m/s	-	RO
994	Temperature compensated Irradiance Min:0; Max:16000	U16	Watt/m2	0.1	RO
995	Cell temperature. Min:-550; Max:1250	S16	°C	0.1	RO
996	Ext. temp. 1 as 'sign value'	S16	°C	0.1	RO

	Min:-550;Max:1250				
997	Ext. temp. 2 as 'sign value' Min:-550;Max:1250	S16	°C	0.1	RO
998	External relative humidity Min:0; Max:100	U16	%	-	RO
999	Wind direction. Min:0; Max:359	U16	°	-	RO

## 2.2 90 inverters mapping table

### Method 1: Modbus ID is 239

In this mode, the TCP client uses 239 as the Modbus ID, and each inverter is assigned a separate register address, containing 389 registers. The register address range is divided as follow:

- COM 1 mapping table

inverter_modbus_id	map_reg_start	device	map_reg_end
3	1000	COM1 30 inverters	1389
4	1390		1779
5	1780		2169
6	2170		2559
7	2560		2949
8	2950		3339
9	3340		3729
10	3730		4119
11	4120		4509
12	4510		4899
13	4900		5289
14	5290		5679
15	5680		6069
16	6070		6459
17	6460		6849
18	6850		7239
19	7240		7629
20	7630		8019
21	8020		8409
22	8410		8799
23	8800		9189
24	9190		9579
25	9580		9969
26	9970		10359
27	10360		10749

28	10750		11139
29	11140		11529
30	11530		11919
31	11920		12309
32	12310		12699

- COM 2 mapping table

inverter_modbus_id	map_reg_start	device	map_reg_end
51	12700	COM2 30 inverters	13089
52	13090		13479
53	13480		13869
54	13870		14259
55	14260		14649
56	14650		15039
57	15040		15429
58	15430		15819
59	15820		16209
60	16210		16599
61	16600		16989
62	16990		17379
63	17380		17769
64	17770		18159
65	18160		18549
66	18550		18939
67	18940		19329
68	19330		19719
69	19720		20109
70	20110		20499
71	20500		20889
72	20890		21279
73	21280		21669
74	21670		22059
75	22060		22449
76	22450		22839
77	22840		23229
78	23230		23619
79	23620		24009
80	24010		24399

- COM 3 mapping table

inverter_modbus_id	map_reg_start	device	map_reg_end
102	24400	COM3 30 inverters	24789
103	24790		25179

104	25180		25569
105	25570		25959
106	25960		26349
107	26350		26739
108	26740		27129
109	27130		27519
110	27520		27909
111	27910		28299
112	28300		28689
113	28690		29079
114	29080		29469
115	29470		29859
116	29860		30249
117	30250		30639
118	30640		31029
119	31030		31419
120	31420		31809
121	31810		32199
122	32200		32589
123	32590		32979
124	32980		33369
125	33370		33759
126	33760		34149
127	34150		34539
128	34540		34929
129	34930		35319
130	35320		35709
131	35710		36099

For every inverter, from the start mapping address to the end mapping address. It contains inverter modbus protocol table 31001-31388 input register data. Please refer to the AISWEI MODBUS protocol for register details.

- AISWEI MODBUS Protocol Register Description:

ADDR(DEC)	Description/number code	Type	Unit	Gain	Access
1000	Device Type: 1=Single phase / 3=Three phase	String			RO
1001	Modbus address: Default as 3	U16			RO
1002~1017	Serial Number	String			RO
1018~1025	Machine type: for example, "ASW3000", please refer to the specific machine in practice	String			RO

1026	Current grid code: refer to Section 3.5	E16			RO
1027~1028	Rated Power	U32	W	1.0	RO
1029~1035	Master Software Version	String			RO
1036~1042	Slave Software Version	String			RO
1043~1049	Safety Version	String			RO
1050~1055	Communication protocol version: 2.1.5	String			RO
1056~1063	Manufacturer's name: for example, "AISWEI", refer to the specific machine	String			RO
1064~1071	Brand name: for example, "AISWEI", please refer to the specific machine	String	-	-	RO
1072	Inverter model: 1-PV Single phase1-3kw 2-PV Single phase3-6kw 3-PV Three phase3-10kW 4-PV Three phase15-23kW 5-PV Three phase50-60kW 11-HY Single phase1-3kW 12-HY Single phase3-6kW 13-HY Three phase5-12kW 14-HY Single phase<1kW (Compass) 15-HY Three phase without EPS5-12kW 16-HY Three phase with diesel5-12kW	E16	-	-	RO
1073	MPPT number	U16	-	-	RO
1074	String current number	U16	-	-	RO
1075~1076	Hardware version	String	-	-	RO
1077~1079	Master CPU sub-version	String	-	-	RO
1096~1102	Slaver CPU version	String	-	-	RO
1103~1015	Slaver CPU sub-version	String	-	-	RO
1116	PV1~PV4 string current number	U16	-	-	RO
1117	PV5~PV8 string current number	U16	-	-	RO
1118	PV9~PV12 string current number	U16	-	-	RO
1119	PV13~PV16 string current number	U16	-	-	RO



1120	PV17~PV20 string current number	U16	-	-	RO
1121	PV21~PV24 string current number	U16	-	-	RO
1122	PV25~PV28 string current number	U16	-	-	RO
1123	PV29~PV32 string current number	U16	-	-	RO
1124~1299	Reserve	-	-	-	-
1300	Grid rated voltage	U16	V	0.1	RO
1301	Grid rated frequency	U16	Hz	0.01	RO
1302~1303	E-Today of inverter	U32	kWh	0.1	RO
1304~1305	E-Total of inverter	U32	kWh	0.1	RO
1306~1307	H-Total	U32	H	1.0	RO
1308	Device State: 0 = Wait 1 = Normal 2 = Fault 4 = Checking	E16	-	-	RO
1309	Connect time	U16	s	1.0	RO
1310	Internal temperature	S16	℃	0.1	RO
1311	Inverter U phase temperature	S16	℃	0.1	RO
1312	Inverter V phase temperature	S16	℃	0.1	RO
1313	Inverter W phase temperature	S16	℃	0.1	RO
1314	Boost temperature	S16	℃	0.1	RO
1315	Bidirectional DC/DC Converter temperature(*)	S16	℃	0.1	RO
1316	Bus voltage	U16	V	0.1	RO
1318	PV1 voltage	U16	V	0.1	RO
1319	PV1 current	U16	A	0.01	RO
1320	PV2 voltage	U16	V	0.1	RO
1321	PV2 current	U16	A	0.01	RO
1322	PV3 voltage(*)	U16	V	0.1	RO
1323	PV3 current(*)	U16	A	0.01	RO
1324	PV4 voltage(*)	U16	V	0.1	RO

1325	PV4 current(*)	U16	A	0.01	RO
1326	PV5 voltage(*)	U16	V	0.1	RO
1327	PV5 current(*)	U16	A	0.01	RO
1328	PV6 voltage(*)	U16	V	0.1	RO
1329	PV6 current(*)	U16	A	0.01	RO
31330	PV7 voltage(*)	U16	V	0.1	RO
1331	PV7 current(*)	U16	A	0.01	RO
1332	PV8 voltage(*)	U16	V	0.1	RO
1333	PV8 current(*)	U16	A	0.01	RO
1334	PV9 voltage(*)	U16	V	0.1	RO
1335	PV9 current(*)	U16	A	0.01	RO
1336	PV10 voltage(*)	U16	V	0.1	RO
1337	PV10 current(*)	U16	A	0.01	RO
1338	String 1 current(*)	U16	A	0.1	RO
1339	String 2 current(*)	U16	A	0.1	RO
1340	String 3 current(*)	U16	A	0.1	RO
1341	String 4 current(*)	U16	A	0.1	RO
1342	String 5 current(*)	U16	A	0.1	RO
1343	String 6 current(*)	U16	A	0.1	RO
1344	String 7 current(*)	U16	A	0.1	RO
1345	String 8 current(*)	U16	A	0.1	RO
1346	String 9 current(*)	U16	A	0.1	RO
1347	String 10 current(*)	U16	A	0.1	RO
1348	String 11 current(*)	U16	A	0.1	RO
1349	String 12 current(*)	U16	A	0.1	RO
1350	String 13 current(*)	U16	A	0.1	RO
1351	String 14 current(*)	U16	A	0.1	RO
1352	String 15 current(*)	U16	A	0.1	RO
1353	String 16 current(*)	U16	A	0.1	RO

1354	String 17 current(*)	U16	A	0.1	RO
1355	String 18 current(*)	U16	A	0.1	RO
1356	String 19 current(*)	U16	A	0.1	RO
1357	String 20 current(*)	U16	A	0.1	RO
1358	L1 Phase voltage	U16	V	0.1	RO
1359	L1 Phase current	U16	A	0.1	RO
1360	L2 Phase voltage(*)	U16	V	0.1	RO
1361	L2 Phase current(*)	U16	A	0.1	RO
1362	L3 Phase voltage(*)	U16	V	0.1	RO
1363	L3 Phase current(*)	U16	A	0.1	RO
1364	RS Line voltage(*)	U16	V	0.1	RO
1365	RT Line voltage(*)	U16	V	0.1	RO
1366	ST Line voltage(*)	U16	V	0.1	RO
1367	Grid frequency	U16	Hz	0.01	RO
1368~1369	Apparent power	U32	VA	1.0	RO
1370~1371	Active power	S32	W	1.0	RO
1372~1373	Reactive power	S32	Var	1.0	RO
1374	Power factor	S16	-	0.01	RO
1376	Fault state of inverter itself: 0 = No internal fault 1 = Internal fault	E16	-	-	RO
1377	Error message: please refer to section 3.4	E16	-	-	RO
1378	Warning message: please refer to section 3.4	E16	-	-	RO
1388	IOS measure value	U16	-	-	RO

#### Method 2: Modbus ID is Modbus 485 RTU address

In this mode, the inverter Modbus address is used as the Modbus ID, and the register address of each inverter is the same: 1000~1389. The parsing of the registers can be found in AISWEI MODBUS Protocol Register Description.

- COM 1 mapping table

inverter_modbus_id	map_reg_start	device	map_reg_end
3	1000	COM1 30 inverters	1389

4	1000		1389
5	1000		1389
6	1000		1389
7	1000		1389
8	1000		1389
9	1000		1389
10	1000		1389
11	1000		1389
12	1000		1389
13	1000		1389
14	1000		1389
15	1000		1389
16	1000		1389
17	1000		1389
18	1000		1389
19	1000		1389
20	1000		1389
21	1000		1389
22	1000		1389
23	1000		1389
24	1000		1389
25	1000		1389
26	1000		1389
27	1000		1389
28	1000		1389
29	1000		1389
30	1000		1389
31	1000		1389
32	1000		1389

- COM 2 mapping table

inverter_modbus_id	map_reg_start	device	map_reg_end
51	1000		1389
52	1000		1389
53	1000		1389
54	1000		1389
55	1000		1389
56	1000		1389
57	1000		1389
58	1000		1389
59	1000		1389
60	1000		1389
61	1000		1389
62	1000		1389

  

inverter_modbus_id	map_reg_start	device	map_reg_end
51	1000	COM2 30 inverters	1389
52	1000		1389
53	1000		1389
54	1000		1389
55	1000		1389
56	1000		1389
57	1000		1389
58	1000		1389
59	1000		1389
60	1000		1389
61	1000		1389
62	1000		1389

63	1000		1389
64	1000		1389
65	1000		1389
66	1000		1389
67	1000		1389
68	1000		1389
69	1000		1389
70	1000		1389
71	1000		1389
72	1000		1389
73	1000		1389
74	1000		1389
75	1000		1389
76	1000		1389
77	1000		1389
78	1000		1389
79	1000		1389
80	1000		1389

- COM 3 mapping table

inverter_modbus_id	map_reg_start	device	map_reg_end
102	1000		1389
103	1000		1389
104	1000		1389
105	1000		1389
106	1000		1389
107	1000		1389
108	1000		1389
109	1000		1389
110	1000		1389
111	1000		1389
112	1000		1389
113	1000	COM3 30 inverters	1389
114	1000		1389
115	1000		1389
116	1000		1389
117	1000		1389
118	1000		1389
119	1000		1389
120	1000		1389
121	1000		1389
122	1000		1389
123	1000		1389
124	1000		1389

125	1000		1389
126	1000		1389
127	1000		1389
128	1000		1389
129	1000		1389
130	1000		1389
131	1000		1389

## NOTE

If your Modbus TCP master device can use different slave IDs, when it reads data every time. You can use this method, otherwise please use method 1.

## 2.3 All inverter power data mapping table

ADDR(DEC)	Description/number code	Type	Unit	Gain	Access
36100~36101	Active power of total inverter	S32	W	1	RO
36102~36103	Reactive power of total inverter	S32	Var	1	RO

## 2.4 SDM630 meter data mapping table

Register	Description
36104~36184	Reference SD630 meter register from 30001 to 30081
36186~36204	Reference SD630 meter register from 30201 to 30207

ADDR(DEC)	Description/number code	Type	Unit	Gain	Access
36104	Phase 1 line to neutral volts.	float	Volts	-	RO
36106	Phase 2 line to neutral volts.	float	Volts	-	RO
36108	Phase 3 line to neutral volts	float	Volts	-	RO
36110	Phase 1 current.	float	Amps	-	RO
36112	Phase 2 current.	float	Amps	-	RO
36114	Phase 3 current.	float	Amps	-	RO
36116	Phase 1 power.	float	Watts	-	RO
36118	Phase 2 power.	float	Watts	-	RO
36120	Phase 3 power.	float	Watts	-	RO
36122	Phase 1 volt amps.	float	VA	-	RO
36124	Phase 2 volt amps.	float	VA	-	RO
36126	Phase 3 volt amps.	float	VA	-	RO
36128	Phase 1 volt amps reactive.	float	VAr	-	RO
36130	Phase 2 volt amps reactive.	float	VAr	-	RO
36132	Phase 3 volt amps reactive.	float	VAr	-	RO
36134	Phase 1 power factor (1).	float	None	-	RO
36136	Phase 2 power factor (1).	float	None	-	RO
36138	Phase 3 power factor (1).	float	None	-	RO
36140	Phase 1 phase angle.	float	Degrees	-	RO
36142	Phase 2 phase angle.	float	Degrees	-	RO
36144	Phase 3 phase angle.	float	Degrees	-	RO
36146	Average line to neutral volts.	float	Volts	-	RO

36150	Average line current.	float	Amps	-	RO
36152	Sum of line currents.	float	Amps	-	RO
36156	Total system power.	float	Watts	-	RO
36160	Total system volt amps.	float	VA	-	RO
36164	Total system VAr.	float	VAr	-	RO
36166	Total system power factor (1).	float	None	-	RO
36170	Total system phase angle.	float	Degrees	-	RO
36174	Frequency of supply voltages.	float	Hz	-	RO
36176	Import Wh since last reset (2).	float	kWh/ MWh	-	RO
36178	Export Wh since last reset (2).	float	kWh/ MWh	-	RO
36180	Import VArh since last reset (2).	float	kVArh/ MVARh	-	RO
36182	Export VArh since last reset (2).	float	kVArh/ MVARh	-	RO
36184	VAh since last reset (2).	float	kVAh/ MVAh	-	RO
36186	Line 1 to Line 2 volts	float	Volts	-	RO
36188	Line 2 to Line 3 volts	float	Volts	-	RO
36190	Line 3 to Line 1 volts	float	Volts	-	RO
36204	Average line to line volts.	float	Volts	-	RO

## 2.5 Inverter control mapping table

The holding register area (registers 4xxxx, function code 06) is used only for inverter output power control function.

ADDR(DEC)	Description/number code	Type	Unit	Gain	Access
60000	Active power control command -100~100	S16	%Pn	0.01	WO
60001	AC Power Factor control command 0.75~1 Leading -1~-0.75 Lagging	S16	-	0.0001	WO
60002	Inverter ON/OFF control command 1: turn on	U16	-	-	WO



	2: turn off				
60003	Active Power limitation percentage 0~110	U16	%Pn	0.01	WO
60004	Reactive power Q value control command 0~65, Leading -65~0, Lagging	S16	%Sn	0.01	WO

### 3 Application Notes

#### Method 1:

Modbus TCP test tool read com1 ID is 3 inverter's 75 registers, following picture.

Start	<input type="text" value="1000"/>	Size	<input type="text" value="75"/>	<input type="button" value="Apply"/>	<input type="button" value="Clear"/>										
1000	<input type="text" value="51"/>	1010	<input type="text" value="12336"/>	1020	<input type="text" value="20065"/>	1030	<input type="text" value="12592"/>	1040	<input type="text" value="12345"/>	1050	<input type="text" value="22066"/>	1060	<input type="text" value="8293"/>	1070	<input type="text" value="8224"/>
1001	<input type="text" value="3"/>	1011	<input type="text" value="12343"/>	1021	<input type="text" value="28005"/>	1031	<input type="text" value="11568"/>	1041	<input type="text" value="11568"/>	1051	<input type="text" value="11825"/>	1061	<input type="text" value="28261"/>	1071	<input type="text" value="8224"/>
1002	<input type="text" value="21573"/>	1012	<input type="text" value="0"/>	1022	<input type="text" value="21605"/>	1032	<input type="text" value="13104"/>	1042	<input type="text" value="12320"/>	1052	<input type="text" value="11825"/>	1062	<input type="text" value="29287"/>	1072	<input type="text" value="4"/>
1003	<input type="text" value="12848"/>	1013	<input type="text" value="0"/>	1023	<input type="text" value="29556"/>	1033	<input type="text" value="13363"/>	1043	<input type="text" value="22070"/>	1053	<input type="text" value="16726"/>	1063	<input type="text" value="31008"/>	1073	<input type="text" value="2"/>
1004	<input type="text" value="19266"/>	1014	<input type="text" value="0"/>	1024	<input type="text" value="0"/>	1034	<input type="text" value="11568"/>	1044	<input type="text" value="12592"/>	1054	<input type="text" value="12846"/>	1064	<input type="text" value="16713"/>	1074	<input type="text" value="0"/>
1005	<input type="text" value="21552"/>	1015	<input type="text" value="0"/>	1025	<input type="text" value="0"/>	1035	<input type="text" value="13344"/>	1045	<input type="text" value="11569"/>	1055	<input type="text" value="12336"/>	1065	<input type="text" value="21335"/>	1075	<input type="text" value="0"/>
1006	<input type="text" value="12336"/>	1016	<input type="text" value="0"/>	1026	<input type="text" value="70"/>	1036	<input type="text" value="22070"/>	1046	<input type="text" value="12592"/>	1056	<input type="text" value="19265"/>	1066	<input type="text" value="17737"/>	1076	<input type="text" value="0"/>
1007	<input type="text" value="16944"/>	1017	<input type="text" value="0"/>	1027	<input type="text" value="0"/>	1037	<input type="text" value="12592"/>	1047	<input type="text" value="12345"/>	1057	<input type="text" value="17231"/>	1067	<input type="text" value="8224"/>	1077	<input type="text" value="0"/>
1008	<input type="text" value="12336"/>	1018	<input type="text" value="28015"/>	1028	<input type="text" value="20000"/>	1038	<input type="text" value="11574"/>	1048	<input type="text" value="11568"/>	1058	<input type="text" value="8302"/>	1068	<input type="text" value="8224"/>	1078	<input type="text" value="0"/>
1009	<input type="text" value="12336"/>	1019	<input type="text" value="25701"/>	1029	<input type="text" value="22070"/>	1039	<input type="text" value="12336"/>	1049	<input type="text" value="12576"/>	1059	<input type="text" value="25975"/>	1069	<input type="text" value="8224"/>	1079	<input type="text" value="0"/>

Modbus TCP test tool read com1 ID is 31 inverter's 75 registers, following picture.

Start	<input type="text" value="11920"/>	Size	<input type="text" value="75"/>	<input type="button" value="Apply"/>	<input type="button" value="Clear"/>										
11920	<input type="text" value="51"/>	11930	<input type="text" value="0"/>	11940	<input type="text" value="30063"/>	11950	<input type="text" value="12592"/>	11960	<input type="text" value="12345"/>	11970	<input type="text" value="22066"/>	11980	<input type="text" value="0"/>	11990	<input type="text" value="0"/>
11921	<input type="text" value="31"/>	11931	<input type="text" value="0"/>	11941	<input type="text" value="13616"/>	11951	<input type="text" value="11568"/>	11961	<input type="text" value="11568"/>	11971	<input type="text" value="11825"/>	11981	<input type="text" value="0"/>	11991	<input type="text" value="0"/>
11922	<input type="text" value="16721"/>	11932	<input type="text" value="0"/>	11942	<input type="text" value="27479"/>	11952	<input type="text" value="13360"/>	11962	<input type="text" value="12320"/>	11972	<input type="text" value="11825"/>	11982	<input type="text" value="0"/>	11992	<input type="text" value="10"/>
11923	<input type="text" value="12337"/>	11933	<input type="text" value="0"/>	11943	<input type="text" value="8224"/>	11953	<input type="text" value="12337"/>	11963	<input type="text" value="22070"/>	11973	<input type="text" value="16726"/>	11983	<input type="text" value="0"/>	11993	<input type="text" value="10"/>
11924	<input type="text" value="12592"/>	11934	<input type="text" value="0"/>	11944	<input type="text" value="8224"/>	11954	<input type="text" value="11568"/>	11964	<input type="text" value="12592"/>	11974	<input type="text" value="12846"/>	11984	<input type="text" value="16713"/>	11994	<input type="text" value="20"/>
11925	<input type="text" value="12336"/>	11935	<input type="text" value="0"/>	11945	<input type="text" value="8224"/>	11955	<input type="text" value="13600"/>	11965	<input type="text" value="11569"/>	11975	<input type="text" value="12336"/>	11985	<input type="text" value="21335"/>	11995	<input type="text" value="0"/>
11926	<input type="text" value="12850"/>	11936	<input type="text" value="0"/>	11946	<input type="text" value="35"/>	11956	<input type="text" value="22070"/>	11966	<input type="text" value="12848"/>	11976	<input type="text" value="16713"/>	11986	<input type="text" value="17737"/>	11996	<input type="text" value="0"/>
11927	<input type="text" value="12857"/>	11937	<input type="text" value="0"/>	11947	<input type="text" value="1"/>	11957	<input type="text" value="12592"/>	11967	<input type="text" value="12337"/>	11977	<input type="text" value="21335"/>	11987	<input type="text" value="0"/>	11997	<input type="text" value="0"/>
11928	<input type="text" value="12336"/>	11938	<input type="text" value="18549"/>	11948	<input type="text" value="44464"/>	11958	<input type="text" value="11574"/>	11968	<input type="text" value="11616"/>	11978	<input type="text" value="17737"/>	11988	<input type="text" value="0"/>	11998	<input type="text" value="0"/>
11929	<input type="text" value="12338"/>	11939	<input type="text" value="24916"/>	11949	<input type="text" value="22070"/>	11959	<input type="text" value="12336"/>	11969	<input type="text" value="25120"/>	11979	<input type="text" value="0"/>	11989	<input type="text" value="0"/>	11999	<input type="text" value="0"/>

Modbus TCP test tool read com2 ID is 51 inverter's 75 registers, following picture.

Start	<input type="text" value="12700"/>	Size	<input type="text" value="75"/>											<input type="button" value="Apply"/>	<input type="button" value="Clear"/>
12700	<input type="text" value="51"/>	12710	<input type="text" value="0"/>	12720	<input type="text" value="30063"/>	12730	<input type="text" value="12592"/>	12740	<input type="text" value="12345"/>	12750	<input type="text" value="22066"/>	12760	<input type="text" value="0"/>	12770	<input type="text" value="0"/>
12701	<input type="text" value="51"/>	12711	<input type="text" value="0"/>	12721	<input type="text" value="13616"/>	12731	<input type="text" value="11568"/>	12741	<input type="text" value="11568"/>	12751	<input type="text" value="11825"/>	12761	<input type="text" value="0"/>	12771	<input type="text" value="0"/>
12702	<input type="text" value="16721"/>	12712	<input type="text" value="0"/>	12722	<input type="text" value="27479"/>	12732	<input type="text" value="13360"/>	12742	<input type="text" value="12320"/>	12752	<input type="text" value="11825"/>	12762	<input type="text" value="0"/>	12772	<input type="text" value="10"/>
12703	<input type="text" value="12337"/>	12713	<input type="text" value="0"/>	12723	<input type="text" value="8224"/>	12733	<input type="text" value="12337"/>	12743	<input type="text" value="22070"/>	12753	<input type="text" value="16726"/>	12763	<input type="text" value="0"/>	12773	<input type="text" value="10"/>
12704	<input type="text" value="12592"/>	12714	<input type="text" value="0"/>	12724	<input type="text" value="8224"/>	12734	<input type="text" value="11568"/>	12744	<input type="text" value="12592"/>	12754	<input type="text" value="12846"/>	12764	<input type="text" value="16713"/>	12774	<input type="text" value="20"/>
12705	<input type="text" value="12336"/>	12715	<input type="text" value="0"/>	12725	<input type="text" value="8224"/>	12735	<input type="text" value="13600"/>	12745	<input type="text" value="11569"/>	12755	<input type="text" value="12336"/>	12765	<input type="text" value="21335"/>	12775	<input type="text" value="0"/>
12706	<input type="text" value="12850"/>	12716	<input type="text" value="0"/>	12726	<input type="text" value="35"/>	12736	<input type="text" value="22070"/>	12746	<input type="text" value="12848"/>	12756	<input type="text" value="16713"/>	12766	<input type="text" value="17737"/>	12776	<input type="text" value="0"/>
12707	<input type="text" value="12857"/>	12717	<input type="text" value="0"/>	12727	<input type="text" value="1"/>	12737	<input type="text" value="12592"/>	12747	<input type="text" value="12337"/>	12757	<input type="text" value="21335"/>	12767	<input type="text" value="0"/>	12777	<input type="text" value="0"/>
12708	<input type="text" value="12336"/>	12718	<input type="text" value="18549"/>	12728	<input type="text" value="44464"/>	12738	<input type="text" value="11574"/>	12748	<input type="text" value="11616"/>	12758	<input type="text" value="17737"/>	12768	<input type="text" value="0"/>	12778	<input type="text" value="0"/>
12709	<input type="text" value="12338"/>	12719	<input type="text" value="24916"/>	12729	<input type="text" value="22070"/>	12739	<input type="text" value="12336"/>	12749	<input type="text" value="25120"/>	12759	<input type="text" value="0"/>	12769	<input type="text" value="0"/>	12779	<input type="text" value="0"/>

Modbus TCP test tool read com2 ID is 78 inverter's 75 registers, following picture.

Start	<input type="text" value="23230"/>	Size	<input type="text" value="75"/>											<input type="button" value="Apply"/>	<input type="button" value="Clear"/>
23230	<input type="text" value="51"/>	23240	<input type="text" value="0"/>	23250	<input type="text" value="30063"/>	23260	<input type="text" value="12592"/>	23270	<input type="text" value="12345"/>	23280	<input type="text" value="22066"/>	23290	<input type="text" value="0"/>	23300	<input type="text" value="0"/>
23231	<input type="text" value="78"/>	23241	<input type="text" value="0"/>	23251	<input type="text" value="13616"/>	23261	<input type="text" value="11568"/>	23271	<input type="text" value="11568"/>	23281	<input type="text" value="11825"/>	23291	<input type="text" value="0"/>	23301	<input type="text" value="0"/>
23232	<input type="text" value="16721"/>	23242	<input type="text" value="0"/>	23252	<input type="text" value="27479"/>	23262	<input type="text" value="13360"/>	23272	<input type="text" value="12320"/>	23282	<input type="text" value="11825"/>	23292	<input type="text" value="0"/>	23302	<input type="text" value="10"/>
23233	<input type="text" value="12337"/>	23243	<input type="text" value="0"/>	23253	<input type="text" value="8224"/>	23263	<input type="text" value="12337"/>	23273	<input type="text" value="22070"/>	23283	<input type="text" value="16726"/>	23293	<input type="text" value="0"/>	23303	<input type="text" value="10"/>
23234	<input type="text" value="12592"/>	23244	<input type="text" value="0"/>	23254	<input type="text" value="8224"/>	23264	<input type="text" value="11568"/>	23274	<input type="text" value="12592"/>	23284	<input type="text" value="12846"/>	23294	<input type="text" value="16713"/>	23304	<input type="text" value="20"/>
23235	<input type="text" value="12336"/>	23245	<input type="text" value="0"/>	23255	<input type="text" value="8224"/>	23265	<input type="text" value="13600"/>	23275	<input type="text" value="11569"/>	23285	<input type="text" value="12336"/>	23295	<input type="text" value="21335"/>	23305	<input type="text" value="0"/>
23236	<input type="text" value="12850"/>	23246	<input type="text" value="0"/>	23256	<input type="text" value="35"/>	23266	<input type="text" value="22070"/>	23276	<input type="text" value="12848"/>	23286	<input type="text" value="16713"/>	23296	<input type="text" value="17737"/>	23306	<input type="text" value="0"/>
23237	<input type="text" value="12857"/>	23247	<input type="text" value="0"/>	23257	<input type="text" value="1"/>	23267	<input type="text" value="12592"/>	23277	<input type="text" value="12337"/>	23287	<input type="text" value="21335"/>	23297	<input type="text" value="0"/>	23307	<input type="text" value="0"/>
23238	<input type="text" value="12336"/>	23248	<input type="text" value="18549"/>	23258	<input type="text" value="44464"/>	23268	<input type="text" value="11574"/>	23278	<input type="text" value="11616"/>	23288	<input type="text" value="17737"/>	23298	<input type="text" value="0"/>	23308	<input type="text" value="0"/>
23239	<input type="text" value="12851"/>	23249	<input type="text" value="24916"/>	23259	<input type="text" value="22070"/>	23269	<input type="text" value="12336"/>	23279	<input type="text" value="25120"/>	23289	<input type="text" value="0"/>	23299	<input type="text" value="0"/>	23309	<input type="text" value="0"/>

Modbus TCP test tool read com3 ID is 102 inverter's 75 registers, following picture.

Start	<input type="text" value="24400"/>	Size	<input type="text" value="75"/>											<input type="button" value="Apply"/>	<input type="button" value="Clear"/>
24400	<input type="text" value="51"/>	24410	<input type="text" value="0"/>	24420	<input type="text" value="30063"/>	24430	<input type="text" value="12592"/>	24440	<input type="text" value="12345"/>	24450	<input type="text" value="22066"/>	24460	<input type="text" value="0"/>	24470	<input type="text" value="0"/>
24401	<input type="text" value="102"/>	24411	<input type="text" value="0"/>	24421	<input type="text" value="13616"/>	24431	<input type="text" value="11568"/>	24441	<input type="text" value="11568"/>	24451	<input type="text" value="11825"/>	24461	<input type="text" value="0"/>	24471	<input type="text" value="0"/>
24402	<input type="text" value="16721"/>	24412	<input type="text" value="0"/>	24422	<input type="text" value="27479"/>	24432	<input type="text" value="13360"/>	24442	<input type="text" value="12320"/>	24452	<input type="text" value="11825"/>	24462	<input type="text" value="0"/>	24472	<input type="text" value="10"/>
24403	<input type="text" value="12337"/>	24413	<input type="text" value="0"/>	24423	<input type="text" value="8224"/>	24433	<input type="text" value="12337"/>	24443	<input type="text" value="22070"/>	24453	<input type="text" value="16726"/>	24463	<input type="text" value="0"/>	24473	<input type="text" value="10"/>
24404	<input type="text" value="12592"/>	24414	<input type="text" value="0"/>	24424	<input type="text" value="8224"/>	24434	<input type="text" value="11568"/>	24444	<input type="text" value="12592"/>	24454	<input type="text" value="12846"/>	24464	<input type="text" value="16713"/>	24474	<input type="text" value="20"/>
24405	<input type="text" value="12336"/>	24415	<input type="text" value="0"/>	24425	<input type="text" value="8224"/>	24435	<input type="text" value="13600"/>	24445	<input type="text" value="11569"/>	24455	<input type="text" value="12336"/>	24465	<input type="text" value="21335"/>	24475	<input type="text" value="0"/>
24406	<input type="text" value="12850"/>	24416	<input type="text" value="0"/>	24426	<input type="text" value="35"/>	24436	<input type="text" value="22070"/>	24446	<input type="text" value="12848"/>	24456	<input type="text" value="16713"/>	24466	<input type="text" value="17737"/>	24476	<input type="text" value="0"/>
24407	<input type="text" value="12857"/>	24417	<input type="text" value="0"/>	24427	<input type="text" value="1"/>	24437	<input type="text" value="12592"/>	24447	<input type="text" value="12337"/>	24457	<input type="text" value="21335"/>	24467	<input type="text" value="0"/>	24477	<input type="text" value="0"/>
24408	<input type="text" value="12336"/>	24418	<input type="text" value="18549"/>	24428	<input type="text" value="44464"/>	24438	<input type="text" value="11574"/>	24448	<input type="text" value="11616"/>	24458	<input type="text" value="17737"/>	24468	<input type="text" value="0"/>	24478	<input type="text" value="0"/>
24409	<input type="text" value="12849"/>	24419	<input type="text" value="24916"/>	24429	<input type="text" value="22070"/>	24439	<input type="text" value="12336"/>	24449	<input type="text" value="25120"/>	24459	<input type="text" value="0"/>	24469	<input type="text" value="0"/>	24479	<input type="text" value="0"/>

Modbus TCP test tool read com3 ID is 129 inverter's 75 registers, following picture.

Start	34930	Size	75	Apply	Clear										
34930	51	34940	0	34950	30063	34960	12592	34970	12345	34980	22066	34990	0	35000	0
34931	129	34941	0	34951	13616	34961	11568	34971	11568	34981	11825	34991	0	35001	0
34932	16721	34942	0	34952	27479	34962	13360	34972	12320	34982	11825	34992	0	35002	10
34933	12337	34943	0	34953	8224	34963	12337	34973	22070	34983	16726	34993	0	35003	10
34934	12592	34944	0	34954	8224	34964	11568	34974	12592	34984	12846	34994	16713	35004	20
34935	12336	34945	0	34955	8224	34965	13600	34975	11569	34985	12336	34995	21335	35005	0
34936	12850	34946	0	34956	35	34966	22070	34976	12848	34986	16713	34996	17737	35006	0
34937	12857	34947	0	34957	1	34967	12592	34977	12337	34987	21335	34997	0	35007	0
34938	12336	34948	18549	34958	44464	34968	11574	34978	11616	34988	17737	34998	0	35008	0
34939	12338	34949	24916	34959	22070	34969	12336	34979	25120	34989	0	34999	0	35009	0

Modbus TCP test tool read inverter total power and SD630 meter map register, following picture.

Start	36100	Size	100	Apply	Clear										
36100	0	36110	16155	36120	49939	36130	16804	36140	17198	36150	16170	36160	17376	36170	17196
36101	487	36111	34105	36121	49377	36131	62719	36141	14354	36151	34449	36161	10343	36171	39113
36102	0	36112	16167	36122	17169	36132	16819	36142	17196	36152	16383	36162	0	36172	0
36103	0	36113	63065	36123	1815	36133	62213	36143	18967	36153	51674	36163	0	36173	0
36104	17262	36114	16158	36124	17177	36134	49022	36144	17195	36154	0	36164	16998	36174	16967
36105	47718	36115	1932	36125	45574	36135	45759	36145	22480	36155	0	36165	58634	36175	63756
36106	17258	36116	49936	36126	17173	36136	49021	36146	17262	36156	50142	36166	49021	36176	16789
36107	16718	36117	18929	36127	29873	36137	44938	36147	23905	36157	11411	36167	56774	36177	0
36108	17266	36118	49944	36128	16745	36138	49021	36148	0	36158	0	36168	0	36178	17794
36109	7281	36119	20052	36129	50207	36139	5496	36149	0	36159	0	36169	0	36179	39717

Wago 750 read 10 inverter's serial number, output power, Power generation, following picture.

Configuration

Generated Code

Ethernet

MBCFG\_INV100 (PRG)

PLC\_PRG (PRG)

```

0001 INV1_SN = 'QA10010022920081'
0002 INV1_ETODAY = 0
0003 INV1_ETOTAL = 0
0004 INV1_POWER = 0
0005 INV2_SN = 'QA10010022920072'
0006 INV2_ETODAY = 0
0007 INV2_ETOTAL = 0
0008 INV2_POWER = 0
0009 INV3_SN = 'QA10010022920082'
0010 INV3_ETODAY = 0
0011 INV3_ETOTAL = 0
0012 INV3_POWER = 0
0013 INV4_SN = 'QA10010022920042'
0014 INV4_ETODAY = 0
0015 INV4_ETOTAL = 0
0016 INV4_POWER = 0
0017 INV5_SN = 'QA10010022920011'
0018 INV5_ETODAY = 0
0019 INV5_ETOTAL = 0
0020 INV5_POWER = 0
0021 INV6_SN = 'QA10010022920050'
0022 INV6_ETODAY = 0
0023 INV6_ETOTAL = 0
0024 INV6_POWER = 0
0025 MBCFG_IpAddress = '192.168.1.100'
0026 MBCFG_Port = 9999
0027 MBCFG_UniID = 255
0028 MBCFG_TimeOut = T#2s0ms
0029 MBCFG_RequestDelay = T#2s0ms
0030 MBCFG_Error = MBCFG_NO_ERROR
0031 MBCFG_LastJob

0001(*-- for each variable -----*)
0002 zz_VariableList[1].ptVar = ADR(INV1_SN);
0003 zz_VariableList[2].ptVar = ADR(INV1_ETODAY);
0004 zz_VariableList[3].ptVar = ADR(INV1_ETOTAL);
0005 zz_VariableList[4].ptVar = ADR(INV1_POWER);
0006 zz_VariableList[5].ptVar = ADR(INV2_SN);
0007 zz_VariableList[6].ptVar = ADR(INV2_ETODAY);
0008 zz_VariableList[7].ptVar = ADR(INV2_ETOTAL);
0009 zz_VariableList[8].ptVar = ADR(INV2_POWER);
0010 zz_VariableList[9].ptVar = ADR(INV3_SN);
0011 zz_VariableList[10].ptVar = ADR(INV3_ETODAY);
0012 zz_VariableList[11].ptVar = ADR(INV3_ETOTAL);
0013 zz_VariableList[12].ptVar = ADR(INV3_POWER);
0014 zz_VariableList[13].ptVar = ADR(INV4_SN);
0015 zz_VariableList[14].ptVar = ADR(INV4_ETODAY);
0016 zz_VariableList[15].ptVar = ADR(INV4_ETOTAL);
0017 zz_VariableList[16].ptVar = ADR(INV4_POWER);
0018 zz_VariableList[17].ptVar = ADR(INV5_SN);
0019 zz_VariableList[18].ptVar = ADR(INV5_ETODAY);
0020 zz_VariableList[19].ptVar = ADR(INV5_ETOTAL);
0021 zz_VariableList[20].ptVar = ADR(INV5_POWER);
0022 zz_VariableList[21].ptVar = ADR(INV6_SN);
0023 zz_VariableList[22].ptVar = ADR(INV6_ETODAY);
0024 zz_VariableList[23].ptVar = ADR(INV6_ETOTAL);
0025 zz_VariableList[24].ptVar = ADR(INV6_POWER);
0026 zz_VariableList[25].ptVar = ADR(MBCFG_IpAddress);
0027 zz_VariableList[26].ptVar = ADR(MBCFG_Port);
0028 zz_VariableList[27].ptVar = ADR(MBCFG_UniID);
0029 zz_VariableList[28].ptVar = ADR(MBCFG_TimeOut);
0030 zz_VariableList[29].ptVar = ADR(MBCFG_RequestDelay);
0031 zz_VariableList[30].ptVar = ADR(MBCFG_Error);
0032 zz_VariableList[31].ptVar = ADR(MBCFG_LastJob);

```

**Method 2:** Only applicable to read inverter data.

## NOTE

If your Modbus TCP master device can use different slave IDs, when it reads data every time. You can use this method, otherwise please use method 1.

At this time, the slave ID is set to 485 RTU address, the register address range remains unchanged, always ranging from 1000 to 1389.

Modbus TCP test tool read com3 ID is 102 inverter's 75 registers, following picture.

The slave ID is set to 102

The screenshot shows the Modbus TCP test tool interface. The 'Slave ID' is set to 102. The 'Display Format' is set to 'Integer'. The 'Functions' section includes 'Read coils', 'Read holding', 'Write single', and 'Write multiple'. The 'Poll' checkbox is checked with a value of 2000. The 'Start' register is 1000 and the 'Size' is 75. Below the configuration, a table displays the values of 75 registers (1000-1074).

Start	1000	Size	75	Apply	Clear										
1000	51	1010	0	1020	30063	1030	12592	1040	12345	1050	22066	1060	0	1070	0
1001	102	1011	0	1021	13616	1031	11568	1041	11568	1051	11825	1061	0	1071	0
1002	16721	1012	0	1022	27479	1032	13360	1042	12320	1052	11825	1062	0	1072	10
1003	12337	1013	0	1023	8224	1033	12337	1043	22070	1053	16726	1063	0	1073	10
1004	12592	1014	0	1024	8224	1034	11568	1044	12592	1054	12846	1064	16713	1074	20
1005	12336	1015	0	1025	8224	1035	13600	1045	11569	1055	12336	1065	21335	1075	0
1006	12850	1016	0	1026	35	1036	22070	1046	12848	1056	16713	1066	17737	1076	0
1007	12857	1017	0	1027	1	1037	12592	1047	12337	1057	21335	1067	0	1077	0
1008	12336	1018	18549	1028	44464	1038	11574	1048	11616	1058	17737	1068	0	1078	0
1009	12600	1019	24916	1029	22070	1039	12336	1049	25120	1059	0	1069	0	1079	0

Modbus TCP test tool read com3 ID is 129 inverter's 75 registers, following picture.

The slave ID is set to 129

Display Format:  LED  Intege  Binary  FloatRevers  Hex

Functions: Read coils, Read holding, Write single, Write multiple, Read discrete, Read input register, Write single, Write multiple

Poll 2000

Slave ID: 129

Start: 1000 Size: 75

1000	51	1010	0	1020	30063	1030	12592	1040	12345	1050	22066	1060	0	1070	0
1001	129	1011	0	1021	13616	1031	11568	1041	11568	1051	11825	1061	0	1071	0
1002	16721	1012	0	1022	27479	1032	13360	1042	12320	1052	11825	1062	0	1072	10
1003	12337	1013	0	1023	8224	1033	12337	1043	22070	1053	16726	1063	0	1073	10
1004	12592	1014	0	1024	8224	1034	11568	1044	12592	1054	12846	1064	16713	1074	20
1005	12336	1015	0	1025	8224	1035	13600	1045	11569	1055	12336	1065	21335	1075	0
1006	12850	1016	0	1026	35	1036	22070	1046	12846	1056	16713	1066	17737	1076	0
1007	12857	1017	0	1027	1	1037	12592	1047	12337	1057	21335	1067	0	1077	0
1008	12336	1018	18549	1028	44464	1038	11574	1048	11616	1058	17737	1068	0	1078	0
1009	12851	1019	24916	1029	22070	1039	12336	1049	25120	1059	0	1069	0	1079	0

### Application Examples

#### Write inverter 4X registers

- Read first channel 40201 registers 5

Address: 0201 Device Id: 3

Length: 5 MODBUS Point Type: 03: HOLDING REGISTER

Number of Polls: 9 Valid Slave Responses: 9

```

40201: <0001H>
40202: <FFFFH>
40203: <FFFFH>
40204: <FFFFH>
40205: <FFFFH>

```

- Read first channel 42101 registers 80

Address:  Device Id:   
 Length:  MODBUS Point Type:  Number of Polls: 2  
 Valid Slave Responses: 2

42101: <0031H>	42112: <0000H>	42123: <532DH>	42134: <3535H>	42145: <3130H>
42102: <0003H>	42113: <0000H>	42124: <4732H>	42135: <2D30H>	42146: <2D31H>
42103: <5341H>	42114: <0000H>	42125: <0000H>	42136: <3420H>	42147: <3030H>
42104: <3630H>	42115: <0000H>	42126: <0000H>	42137: <5636H>	42148: <3130H>
42105: <3030H>	42116: <0000H>	42127: <0040H>	42138: <3130H>	42149: <2D30H>
42106: <3630H>	42117: <0000H>	42128: <0000H>	42139: <2D30H>	42150: <3320H>
42107: <4132H>	42118: <0000H>	42129: <0E60H>	42140: <3130H>	42151: <5632H>
42108: <3242H>	42119: <4153H>	42130: <5636H>	42141: <3536H>	42152: <2E31H>
42109: <3030H>	42120: <5736H>	42131: <3130H>	42142: <2D30H>	42153: <2E31H>
42110: <3533H>	42121: <3030H>	42132: <2D30H>	42143: <3420H>	42154: <2020H>
42111: <0000H>	42122: <302DH>	42133: <3130H>	42144: <5636H>	42155: <2020H>

- Set first channel register 42101 value to 0x31

Address:  Device Id:   
 Length:  MODBUS Point Type:

写寄存器  
 节点:   
 地址:   
 值 (十六进制):

42101: <0033H>

- Read 42101 registers after setup is complete

Address:  Device Id:   
 Length:  MODBUS Point Type:

42101: <0031H>

- Read the second channel 40201 registers 1

**Address:** 
**Device Id:**

**Length:** 
**MODBUS Point Type**

40201: <0000H>

- Read 70 registers of machine 42101 with second channel ID 51

**Address:** 
**Device Id:** 
**Number of Polls:**

**Length:** 
**MODBUS Point Type**

**Valid Slave Responses:**

42101:	<0031H>	42112:	<0000H>	42123:	<532DH>	42134:	<3535H>	42145:	<3130H>
42102:	<0033H>	42113:	<0000H>	42124:	<4732H>	42135:	<2D30H>	42146:	<2D31H>
42103:	<5341H>	42114:	<0000H>	42125:	<0000H>	42136:	<3420H>	42147:	<3030H>
42104:	<3630H>	42115:	<0000H>	42126:	<0000H>	42137:	<5636H>	42148:	<3130H>
42105:	<3030H>	42116:	<0000H>	42127:	<0040H>	42138:	<3130H>	42149:	<2D30H>
42106:	<3630H>	42117:	<0000H>	42128:	<0000H>	42139:	<2D30H>	42150:	<3320H>
42107:	<4132H>	42118:	<0000H>	42129:	<0E60H>	42140:	<3130H>	42151:	<5632H>
42108:	<3242H>	42119:	<4153H>	42130:	<5636H>	42141:	<3536H>	42152:	<2E31H>
42109:	<3030H>	42120:	<5736H>	42131:	<3130H>	42142:	<2D30H>	42153:	<2E31H>
42110:	<3533H>	42121:	<3030H>	42132:	<2D30H>	42143:	<3420H>	42154:	<2020H>
42111:	<0000H>	42122:	<302DH>	42133:	<3130H>	42144:	<5636H>	42155:	<2020H>

- Read 70 registers of machine 42101 with a third channel ID of 102

**Address:** 
**Device Id:** 
**Number of Polls:**

**Length:** 
**MODBUS Point Type**

**Valid Slave Responses:**

42101:	<0031H>	42112:	<0000H>	42123:	<532DH>	42134:	<3535H>	42145:	<3130H>
42102:	<0066H>	42113:	<0000H>	42124:	<4732H>	42135:	<2D30H>	42146:	<2D31H>
42103:	<5341H>	42114:	<0000H>	42125:	<0000H>	42136:	<3420H>	42147:	<3030H>
42104:	<3630H>	42115:	<0000H>	42126:	<0000H>	42137:	<5636H>	42148:	<3130H>
42105:	<3030H>	42116:	<0000H>	42127:	<0040H>	42138:	<3130H>	42149:	<2D30H>
42106:	<3630H>	42117:	<0000H>	42128:	<0000H>	42139:	<2D30H>	42150:	<3320H>
42107:	<4132H>	42118:	<0000H>	42129:	<0E60H>	42140:	<3130H>	42151:	<5632H>
42108:	<3242H>	42119:	<4153H>	42130:	<5636H>	42141:	<3536H>	42152:	<2E31H>
42109:	<3030H>	42120:	<5736H>	42131:	<3130H>	42142:	<2D30H>	42153:	<2E31H>
42110:	<3533H>	42121:	<3030H>	42132:	<2D30H>	42143:	<3420H>	42154:	<2020H>
42111:	<0000H>	42122:	<302DH>	42133:	<3130H>	42144:	<5636H>	42155:	<2020H>

- Read 1 machine 40201 register with a third channel ID of 102

Address:       Device Id:   
 Length:       MODBUS Point Type:

Number of Polls: 49  
 Valid Slave Responses: 48

---

40201: <0000H>

- Read 1 machine 40201 register with third channel ID 102, value set to 1

Address:       Device Id:   
 Length:       MODBUS Point Type:

写寄存器

节点:

地址:

值 (十六进制):

---

40201: <0000H>

- Read the value of the 40201 register of the machine with the third channel ID of 102 is already 1

Address:       Device Id:   
 Length:       MODBUS Point Type:

Number of Polls: 71  
 Valid Slave Responses: 70

---

40201: <0001H>

## NOTE

When customers use the third-party device to communicate with the ailogger, they should pay attention to the following points:

- Third party devices need to continuously communicate with the Modbus TCP every 1-3 seconds.
- Cannot use single communication and then pause method.
- If they only need to be read/write once, the correct method of operation is to disconnect the TCP link after the read/write is completed.
- If TCP is disconnected or timeout occurs, the third-party device should be reconnected after 5 seconds.
- At the same time, only one device can communicate with Modbus TCP.



## 4 FAQs

No.	Question	Answer
1	What registers does it read from inverters autonomously?	The Ai-logger automatically reads the following registers. 31000~31075 31300~31388
2	Does Ai-logger read a range of registers in one query, or is each register queried in separate queries?	Each inverter needs to be read data twice, reading each inverter one by one.
3	At what intervals does the Ai-logger poll the inverters?	Read a inverter every 5 seconds.
4	How long does it take for 1 inverter to be polled for all required registers by Ai-logger. (similarly, will this time be different with e.g. 10 inverters?)	Read a inverter every 5 seconds.
5	Whether the Ai-logger sends queries to all inverters at the same time or to each osbono one by one.	One by one.
6	Does it matter when/how the inverters are polled, when all inverters are connected to COM1 or all COM ports in the device are used?	Each COM port allocates machines evenly, which is faster than when all inverters are connected to the same port and read once.
7	If we set zero export in Ai-logger, how often does Ai-logger send requests to the inverter to set active power.	If zero export enable, Ai-logger control inverter power output every 400ms.
8	How does Ai-logger check whether the command sent to the inverter has been executed?	The Ai-logger sends data to the inverter, and the inverter will return the result.
9	Is the general principle and scope of operation the same when using ai-dongle?	They are basically the same.
10	How to use Modbus TCP register 60000?	60000 Fast active power control -10000~10000. Its control process is very complex. Assuming the rated power of the machine is 100KW, and the current power is 30KW, the required output power is 50KW, so $(50-30)/100*10000$ , write 2000 to the 60000 register; The current power is 30KW, and the required output power is 10KW. So $(10-30)/100 *10000$ , write -2000 to the 60000 register; At any time, the output power of the inverter is 0, write -10000 to the 60000 register. At any time, the output power of the inverter is 100KW, write 10000 to the 60000 register. Write a 16 bit signed number to the 60000 register every 500ms. The function code is 06.
11	Why can't use a Modbus TCP's register to read some inverter's registers?	This is an unreasonable function, such as want to read the active power register of all inverter use one register. For example, the active power register may have different numbers for each inverter, such as 5000, 60000, 2000. So Modbus TCP cannot provide a definite number.



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