

Modbus Protocol Connectivity Guide

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Safety Information

Important Information

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury. The safety alert symbol shall not be used with this signal word.

Please Note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation and has received safety training to recognize and avoid the hazards involved.

About the Book

Purpose of this Document

The purpose of this document is to guide you with the connectivity of EVlink Pro DC range system communicating through Modbus TCP.

Document Version History

Document Reference– Revision	Release Date	Evolution
D3973815-00	July 2025	Document creation

Terminology

Anacronym	Designation
EVSE	Electrical Vehicle Supply Equipment (charging station compliant with OCPP standard)
EVCE	Electrical Vehicle Charging Expert
OCPP	Open Charge Point Protocol (communication protocol used between the charging stations and a central system)

Related Documents

Document	Reference	Content	Audience
EVlink Pro DC 320/180 Installation Guide	NAT2513802	Civil, mechanical, and electrical installation guidelines	Site engineer or installer/contractor
EVlink Pro DC 320/180 Owners Guide	NAT2513901	Operation and maintenance guidelines	Site operator and end user
EVlink Pro DC 320/180 Commissioning Guide	NAT2514001	Electrical and Communication guidelines	Site engineer or installer/contractor/station operator

Safety Precautions

NOTICE

HAZARD OF INCORRECT USE

- This document contains general descriptions and/or general technical specifications of the products mentioned. It cannot be used to determine the suitability or reliability of these products for specific user applications. It is the responsibility of each user or integrator to conduct the appropriate risk analysis in full, assessing and testing products as regards the application in which they will be used and the execution of this application. Neither Schneider Electric nor any of its affiliated companies or subsidiaries can be held responsible for incorrect use of the information contained in this document. If you have any suggestions for improvements or correction, or have found errors in this publication, please notify us.
- All relevant state, regional, and local safety regulations must be observed when installing and using this product. For reasons of safety and to ensure compliance with documented system data, only the manufacturer should perform repairs to components. When equipment is used for applications with technical safety requirements, follow the relevant instructions.

Failure to follow these instructions can result in equipment damage.

Product Family

This document is applicable to the entire range of Schneider Electric DC chargers, including the following products:

- EVlink Pro DC 60
- EVlink Pro DC 180
- EVlink Pro DC 320
- EVlink Pro DC 180 V2
- EVlink Pro DC 60 V2

EVlink Pro DC Modbus Interface

EVlink Pro DC Modbus interface can be used to limit the charging power of the charging station.

Configuration

Communication Interface:

Ethernet is supported link layer for Modbus interface.

Network Connectivity:

1. TCP Client

Modbus device works as TCP client and connect to charger. The charger always behaves as Modbus Slave.

Port 802 is used of Modbus secured mode via TLS. (Enabled in default, recommended for security)

Port 502 is used for Modbus non-secured mode.

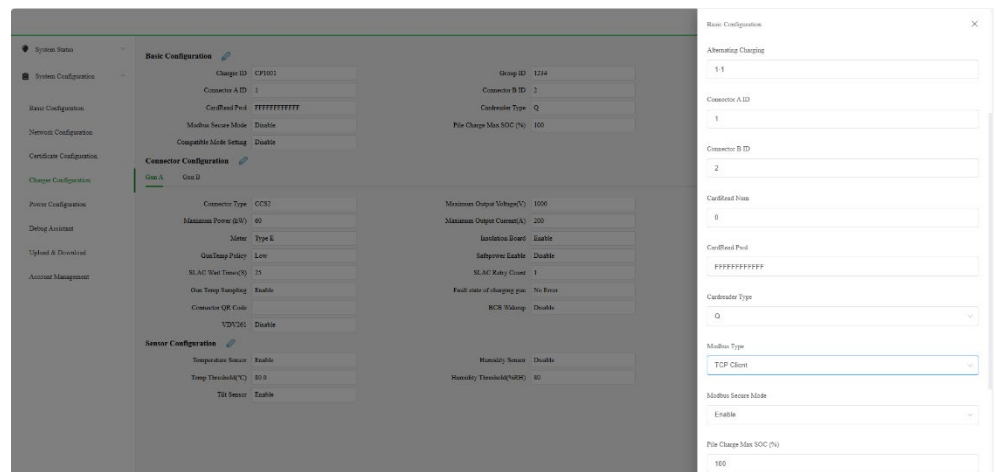
Steps for enable the function.

Step 1: Follow Commissioning Guide to access the Web UI of Charger.

Step 2: Navigate Charger Configuration Tab, click the pencil icon of besides Basic Configuration.

Step 3: Modify the **Modbus Type** item to **TCP Client**.

Step 4: Click **Save** button.



Port forwarding configuration is required in internal router for this connectivity mode.

Steps for configure the port forwarding

Step 1: Follow Commissioning Guide to access the configuration page of internal router.

Step 2: Navigate to **Port Forwarding** menu under **Advanced Network**.

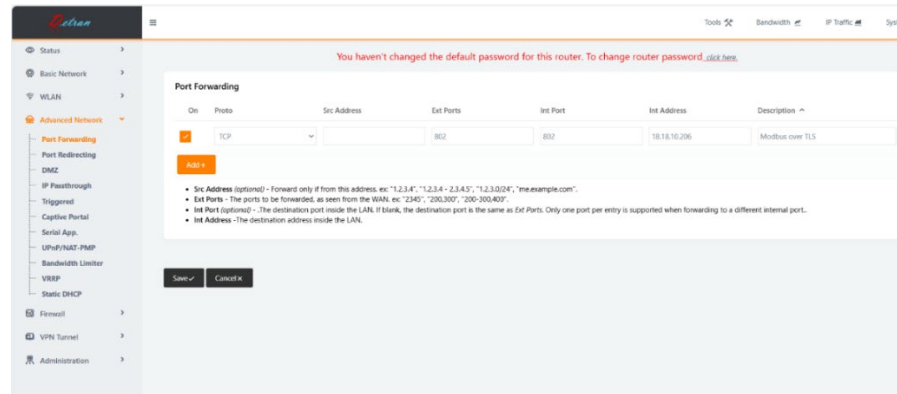
Step 3: Fill in expected external port on WAN in **Ext Ports** field.

Step 4: Fill in Modbus port of Charger in **Int Port** field.

Step 5: Fill in **18.18.10.206** in Int Address field.

Step 6: Click **Add+** button for add this rule.

Step 7: Click **Save** button for complete the configuration.



Example screenshot of Port Forwarding configuration for Modbus secure mode configuration.

2. TCP Server

The charger connects to TCP server with configured IP address.

With configure DLM IP address in Web server of charger, charger will actively connect to DLM.

Steps for enable the function.

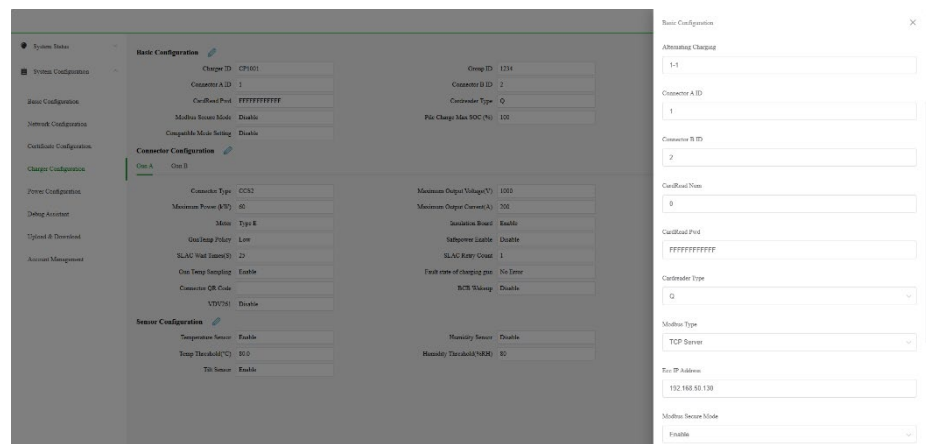
Step 1: Follow Commissioning Guide to access the Web UI of Charger.

Step 2: Navigate to **Charger Configuration** Tab, click the pencil icon of besides Basic Configuration.

Step 3: Modify the **Modbus Type** item to **TCP Client**.

Step 4: Configure **Modbus device IP address**.

Step 5: Click **Save** button.



Registers

Charger Parameters							
Address (Dec)	Function Code	RW / RO	Register Name	Type	No. of Bytes	Units	Comment
0	0x04	RO	Charger status	UINT32	4		1: Run 2: Stop
2	0x04	RO	Error state	UINT32	4		1: Normal 2: Error
4	0x04	RO	Error Code Part 1	STRING	4		First 4 digits from OCPP error codes
6	0x04	RO	Error Code Part 2	STRING	4		Last 4 digits from OCPP error codes
8	0x04	RO	Gun number	UINT32	4		Total number of guns of the charger
10	0x04	RO	Charger serial number	STRING	32		Charger serial number
26	0x04	RO	Charger model number	STRING	32		Charger model number
42	0x04	RO	Charger firmware version number	STRING	32		Charger firmware version number
58	0x04	RO	Identification of product type and features (ratedPower)	UINT32	4		7000: 7 kW 11000: 11 kW 22000: 22 kW 30000: 30 kW 60000: 60 kW 120000: 120 kW 180000: 180 kW 240000: 240 kW 320000: 320 kW
62	0x04	RO	Temperature above the threshold of 55°C	UINT32	4		1: Normal 2: Reach high-temperature threshold
66	0x04	RO	Charging power	INT32	4	0.1kW	Real-time Charging Power, • Charging is positive • Discharge is negative
68	0x04	RO	Real-time charging demand power	UINT32	4	0.1kW	Real-time charging demand power
70	0x04	RO	MAX Demand Power	UINT32	4	0.1kW	Maximum Charging Power
78	0x04 0x10	RW	OfflineSaveValue	UINT32	4	mA W	AC Charger: Offline Charging Current DC Charger: Offline Charging Power
80	0x04	RO	Modbus version	UINT32	4		Modbus Version: 20240918
82	0x04 0x10	RW	Control mode	UINT16	2		0: Charger control mode (default mode) 1: Charger gun control mode

Auto Networking Parameters							
Address (Dec)	Function Code	RW / RO	Register Name	Type	No. of Bytes	Units	Comment
100	0x04	RO	Charger Type	UINT16	2		Charger type: 5 – DC Charger 19 – AC Charger
102	0x04	RO	CPU ID	STRING	32		CPU ID – Each charger has unique CPU ID

Calculated AC Parameter for DC charger							
1xxx: 1 st gun; 2xxx: 2 nd gun							
Address (Dec)	Function Code	RW / RO	Register Name	Type	No. of Bytes	Units	Comment
170	0x04	RO	Charging current phase 1[mA]	UINT32	4	mA	Meter Phase A current (Gun 1)
172	0x04	RO	Charging current phase 2[mA]	UINT32	4	mA	Meter Phase B current (Gun 1)
174	0x04	RO	Charging current phase 3[mA]	UINT32	4	mA	Meter Phase C current (Gun 1)
176	0x04	RO	Measurement active power	UINT32	4	mW	Active Power (Gun 1)
178	0x04	RO	Measurement total energy	UINT32	4	Wh	Total energy
180	0x04	RO	Measurement Voltage phase 1	UINT32	4	V	Meter Phase A voltage (Gun 1)
182	0x04	RO	Measurement Voltage phase 2	UINT32	4	V	Meter Phase B voltage (Gun 1)
184	0x04	RO	Measurement Voltage phase 3	UINT32	4	V	Meter Phase C voltage (Gun 1)
270	0x04	RO	Charging current phase 1[mA]	UINT32	4	mA	Meter Phase A current (Gun 2)
272	0x04	RO	Charging current phase 2[mA]	UINT32	4	mA	Meter Phase B current (Gun 2)
274	0x04	RO	Charging current phase 3[mA]	UINT32	4	mA	Meter Phase C current (Gun 2)
276	0x04	RO	Measurement active power	UINT32	4	mW	Active Power (Gun 2)
278	0x04	RO	Measurement total energy	UINT32	4	Wh	Total energy
280	0x04	RO	Measurement Voltage phase 1	UINT32	4	V	Meter Phase A voltage (Gun 2)
282	0x04	RO	Measurement Voltage phase 2	UINT32	4	V	Meter Phase B voltage (Gun 2)
284	0x04	RO	Measurement Voltage phase 3	UINT32	4	V	Meter Phase C voltage (Gun 2)

Writable Charging Parameters							
Address (Dec)	Function Code	RW / RO	Register Name	Type	No. of Bytes	Units	Comment
500	0x10	RW	Modbus TCP interface limits maximum power (entire charger)	UINT32	4	W	Control the charger power.
0510	0x10	RW	Application layer message polling interval(ms)	UINT32	4	ms	The charger will adjust the trigger time of modbus offline power based on this value. Assuming the polling interval is N, the offline timeout period will be $3 \cdot N + 10\%$, and minimum offline timeout period is 1500ms. If this register not set, the application layer heartbeat detection will be turned off.

Charging gun data: 1XXX: 1 st gun; 2XXX: 2 nd gun							
Address (Dec)	Function Code	RW / RO	Register Name	Type	No. of Bytes	Units	Comment
1000	0x04	RO	Gun charging state	UINT32	4		1: Run, Pause 2: Stop 3: Stopping 4: Fault 5: Alarm
1002	0x04	RO	Charging voltage	UINT32	4	V	Output voltage
1004	0x04	RO	Charging current	UINT32	4	A	Output current
1006	0x04	RO	Charging power	UINT32	4	W	Output power
1011	0x04	RO	Charging time in the current session	UINT32	4	s	Charging time in this session
1015	0x04	RO	Charging energy in the current session	UINT32	4	Wh	Charging energy in this session
1019	0x04	RO	SOC	UINT32	4	1%	Current SOC in the electrical vehicle
1021	0x04	RO	Accumulated Total Charging energy	UINT32	4	Wh	The charging gun accumulated total Charging energy
1057	0x04	RO	Maximum charging power of the gun	UINT32	4	W	Maximum charging power of the gun
1059	0x04	RO	Gun type	UINT32	4		0: Disable 1: CCS 2: CHAdeMO 3: Type 2
1061	0x04	RO	Charger Status	UINT32	4		0: Available (Un-plug) 1: Available (Plug-in) 2: Charging 3: Discharging 4: Stop charging (Plug-in)
1070	0x04	RO	Identification RFID card	STRING	21		User RFID ID
1100	0x04	RO	Maximum Charging demand power	UINT32	4	W	Maximum demand charging power
1102	0x04	RO	CP status (Control pilot)	UINT16	2		Control pilot signal charging status, 0: Invalid 1: A1 - 12V 2: B1 - 9V 3: C1 - 6V 4: D1 - 3V 5: A2 - 12V PWM 6: B2 - 9V PWM 7: C2 - 6V PWM 8: D2 - 3V PWM 9: E - 0V 10: F - -12V, Fault status
1103	0x04	RO	Demand Voltage	UINT32	4	V	Demand voltage - realtime
1105	0x04	RO	Demand Current	UINT32	4	A	Demand current - realtime
1500	0x10	RW	Modbus TCP interface limits maximum power	UINT32	4	W	Charging gun power setting. When both charger power setting and charging gun power setting works, the charging power will be limited to minimum of both setting.
2000	0x04	RO	Gun charging state	UINT32	4		1: Run, Pause 2: Stop 3: Stopping 4: Fault 5: Alarm
2002	0x04	RO	Charging voltage	UINT32	4	V	Output voltage
2004	0x04	RO	Charging current	UINT32	4	A	Output current

2006	0x04	RO	Charging power	UINT32	4	W	Output power
2011	0x04	RO	Charging time in the current session	UINT32	4	s	Charging time in this session
2015	0x04	RO	Charging energy in the current session	UINT32	4	Wh	Charging energy in this session
2019	0x04	RO	SOC	UINT32	4	1%	Current SOC in the electrical vehicle
2021	0x04	RO	Accumulated Total Charging energy	UINT32	4	Wh	The charging gun accumulated total Charging energy
2057	0x04	RO	Maximum charging power of the gun	UINT32	4	W	Maximum charging power of the gun
2059	0x04	RO	Gun type	UINT32	4		0: Disable 1: CCS 2: CHAdeMO 3: Type 2
2061	0x04	RO	Charger Status	UINT32	4		0 : Available (Un-plug) 1 : Available (Plug-in) 2: Charging 3: Discharging 4: Stop charging (Plug-in)
2070	0x04	RO	Identification RFID card	STRING	21		User RFID ID
2100	0x04	RO	Maximum Charging demand power	UINT32	4	W	Maximum demand charging power
2102	0x04	RO	CP status (Control pilot)	UINT16	2		Control pilot signal charging status, 0: Invalid 1: A1 - 12V 2: B1 - 9V 3: C1 - 6V 4: D1 - 3V 5: A2 - 12V PWM 6: B2 - 9V PWM 7: C2 - 6V PWM 8: D2 - 3V PWM 9: E - 0V 10: F - -12V, Fault status
2103	0x04	RO	Demand Voltage	UINT32	4	V	Demand voltage - realtime
2105	0x04	RO	Demand Current	UINT32	4	A	Demand current - realtime
2500	0x10	RW	Modbus TCP interface limits maximum power	UINT32	4	W	Charging gun power setting. When both charger power setting and charging gun power setting works, the charging power will be limited to minimum of both setting.

All exchanged data through Modbus interface is refreshed every 0.1 second.

The table below contains the list of Modbus data formats.

Format Type	Description
UINT16	Unsigned 16-bit integer data, with the high byte preceding the low byte.
UINT32	Unsigned 32-bit integer data, with the high word preceding the low word and the high byte preceding the low byte.
STRING	Character string.

Offline mode

TCP Keepalive mechanism is used for trigger offline mode

Register 78 is used for configuring charging limitation in offline status.

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please ask for confirmation of the information given in this publication.