Schneider Charge Pro Modbus

Connectivity Guide

NAT3046700-03
06/2026





www.se.com

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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.

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 change to with,

*The connectivity of Schneider Charge Pro system communicating through Modbus RTU with external meter (PowerTag Energy Resi9 and P1 smart meter).

*The connectivity of Schneider Charge Pro system communication through Modbus TCP

Document Version History

Document Reference–Revision	Release Date	Evolution
NAT3046700-00	April 2025	Document creation
NAT3046700-01	June 2025	Updates with new features
NAT3046700-02	September 2025	Updates with new features
NAT3046700-03	June 2026	Updates with new feature (Modbus TCP)

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 Title	Document Reference–Revision	Author	Release Date	Link
Schneider Charge Pro Installation Guide	BRU2882901	Schneider Electric	06/2026	https://www.se.com/ww/en/download/document/BRU2882901/
Schneider Charge Pro Commissioning Guide	BRU9949500	Schneider Electric	06/2026	https://www.se.com/ww/en/download/document/BRU9949500/
Schneider Charge Pro OCPP Guide	BRU5587800	Schneider Electric	06/2026	https://www.se.com/ww/en/download/document/BRU5587800/

Safety Precautions

Installation, wiring, testing, and maintenance must be performed in accordance with all local and national electrical codes.

Read carefully and follow the safety precautions below:

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Safe electrical installation must be carried out only by skilled professionals.
Skilled professionals must prove profound knowledge in the following areas:

- Connecting to installation networks.
- Connecting several electrical devices.
- Laying electrical cables.
- Safety standards, local wiring rules and regulations.

Failure to follow these instructions will result in death or serious injury.

NOTICE

UNINTENTIONAL OPERATION

- PowerTag Energy Resi9 load management feature shall be enabled by eSetup commissioning before use.
- The P1 smart meter load management feature shall be enable by eSetup commissioning before use.
- When installing the CT on the cable, pay attention to the correct direction of the phase in relation to the source. Wrong direction generates negative outputs (negative energy).

Failure to follow these instructions will result in malfunction.

Product Family

There are 8 types of charging stations:

- Charging stations with a T2S socket
- Charging stations with an attached cable
- Charging stations with a T2S socket and a MID meter
- Charging stations with an attached cable and a MID meter
- Charging stations with a T2S socket and a cellular modem
- Charging stations with an attached cable and a cellular modem
- Charging stations with a T2S socket, a MID meter and cellular modem
- Charging stations with an attached cable a MID meter and cellular modem









Connectivity with PowerTag Energy Resi9

Introduction

The function of PowerTag Energy Resi9 + Charge Pro is to implement load management.

To enable this feature, you need to conduct commissioning through eSetup.

Please refer to Schneider Charge Pro Commissioning Guide *BRU9949500* for more details.

PowerTag Energy Resi9 Product Information

Energy sensor, PowerTag Resi9 80A 6 circuits LN Modbus(R9M80X6M)

Energy sensor, PowerTag Resi9 universal 80 A, 160 A, 250 A 6 circuits Modbus(R9MUX6M)

The Energy sensor, PowerTag Energy Resi9 (hereinafter referred to as module) measures current, voltage, energy consumption, etc., for monitoring.

This energy sensor provides bi-directional active energy. The active energy is saved in the non-volatile memory of the energy sensor.

The energy sensor provides highly accurate measurement and average value.

To be completed with Resi9 Current Transformer.



R9M80X6M



R9MUX6M

Scan this QR code or the one on the front face of the module to access Go2SE and choose your language for complete information about the device, including operation, configuration and using the product.

R9M80X6M

R9MUX6M

Resi9 Current Transformer 80 A (R9MCT80), 160 A (R9MCT160), 250 A (R9MCT250)

The Resi9 Current Transformer (hereafter referred to as CT) is the actual sensing device. One set has 6 units or 3 units. The set needs to be procured separately. Select the suitable CT with a rating not less than the home installation's current rating.



R9MCT80



R9MCT160



R9MCT250

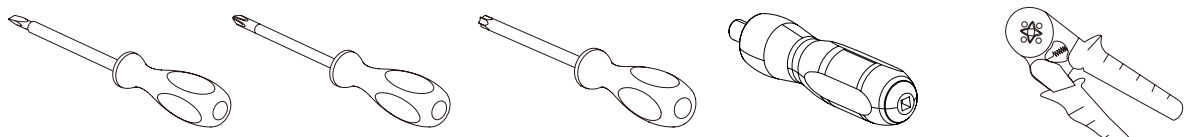
NOTICE

UNINTENTIONAL OPERATION

- PowerTag Resi9 should not be applied in any power grid without neutral line.
- 1-Phase of PowerTag Resi9 should not be applied in any power grid of 3-Phase.
- The phase line where CT ring is installed should be the same as the phase line of the charging station.
- End point of CT ring should always connect to I1+ and I1- of PowerTag Resi9.

Failure to follow these instructions will result in malfunction.

Tools Supplied by User



2 mm/0,8 in
4 mm/1,6 in

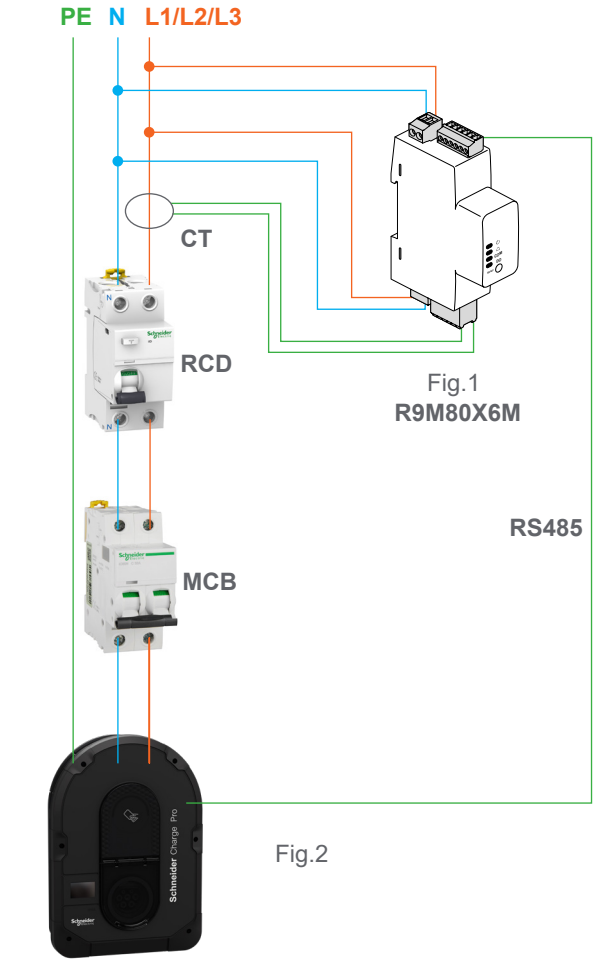
PH2

T20 security

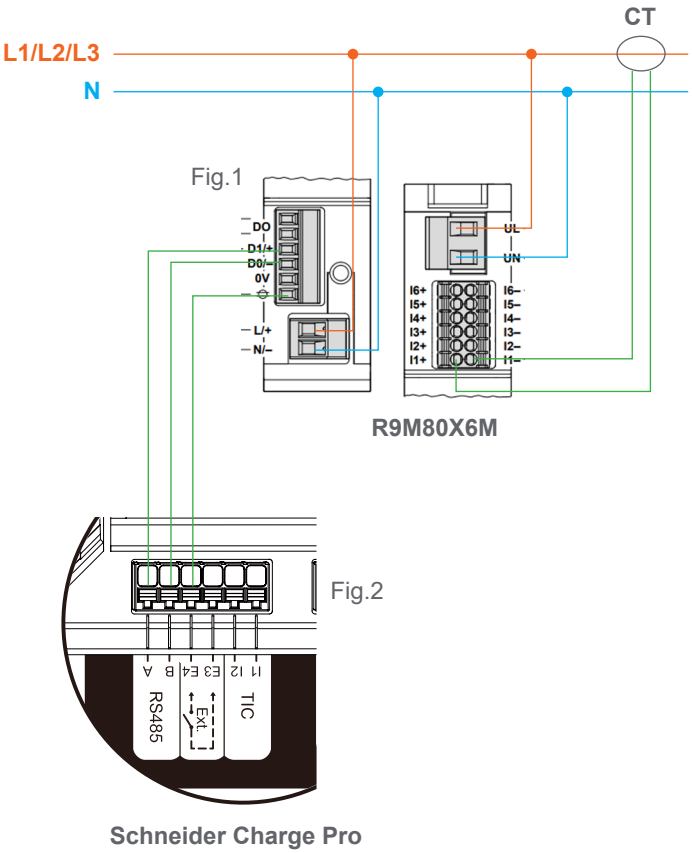
0,5 Nm - 3,5 Nm

Torque driver

Wiring Diagram of R9M80X6M



Schneider Charge Pro



Schneider Charge Pro

Wiring Diagram of R9MUX6M

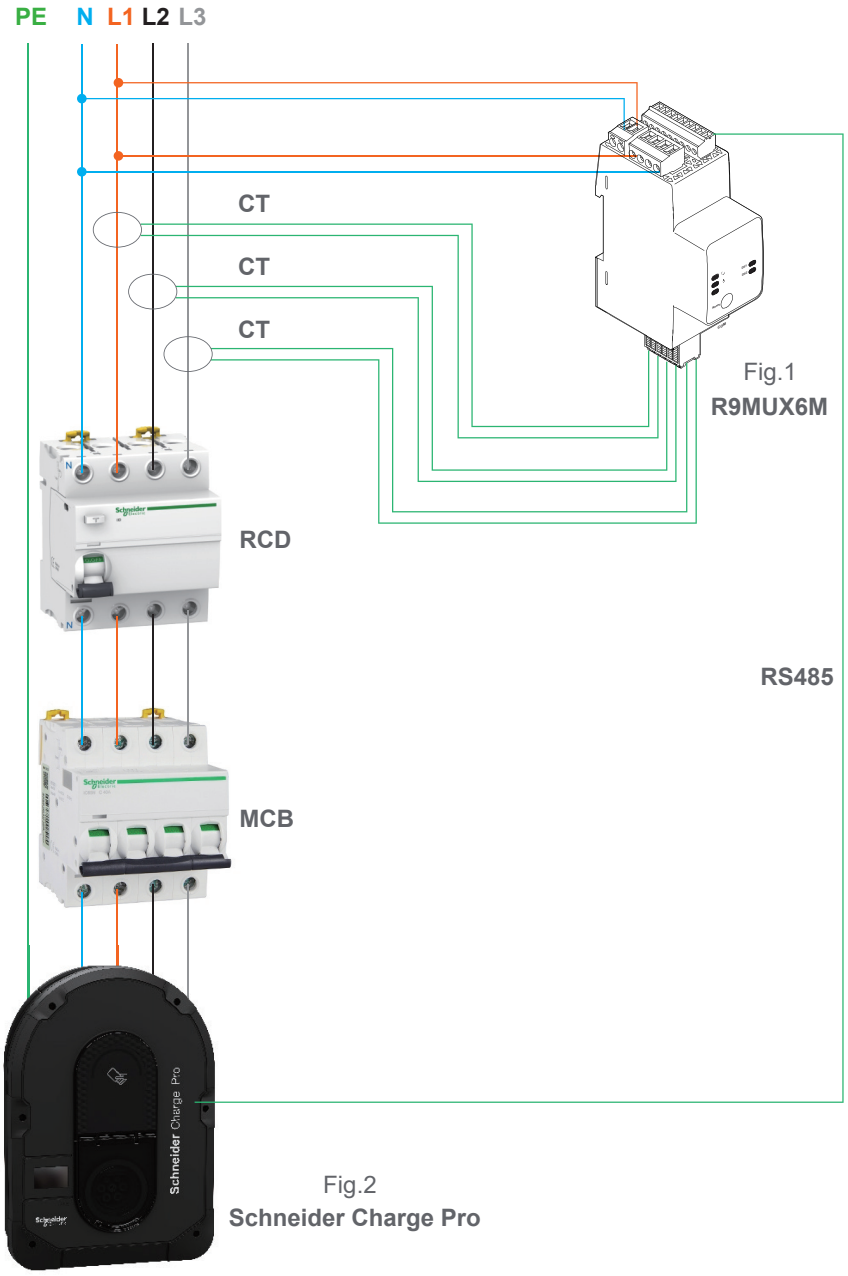


Fig.1
R9MUX6M

Fig.2
Schneider Charge Pro

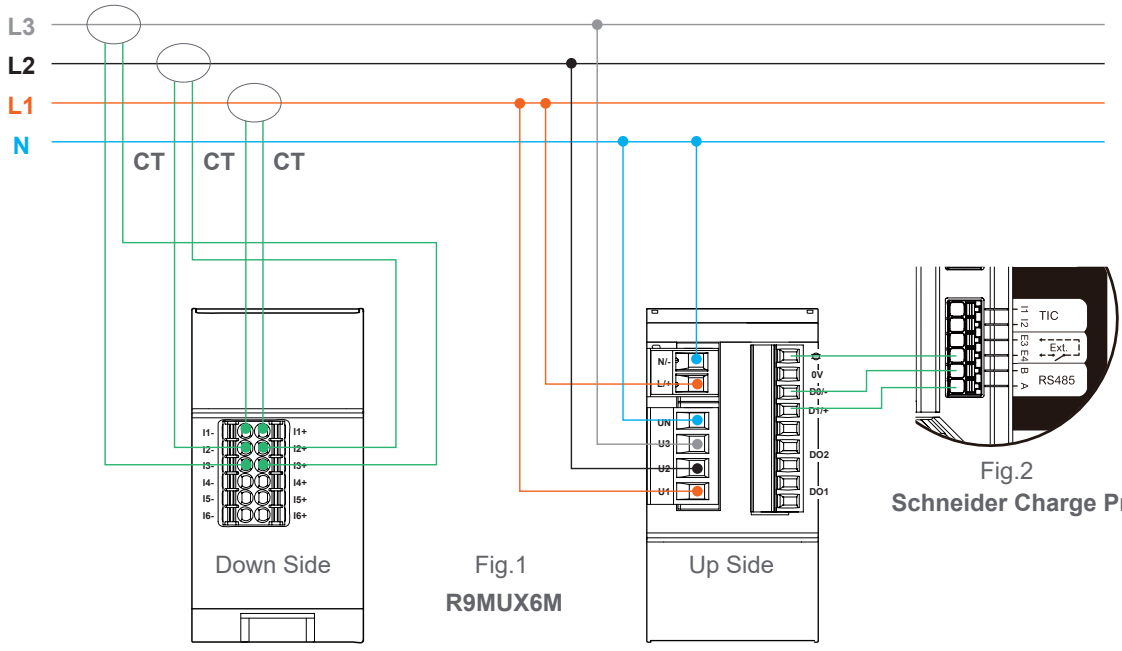


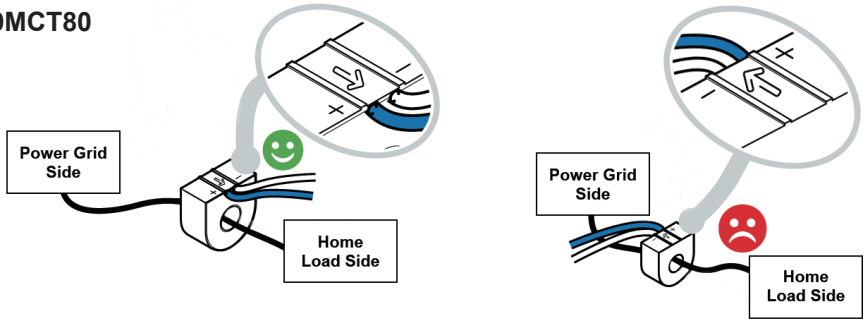
Fig.1
R9MUX6M

Fig.2
Schneider Charge Pro

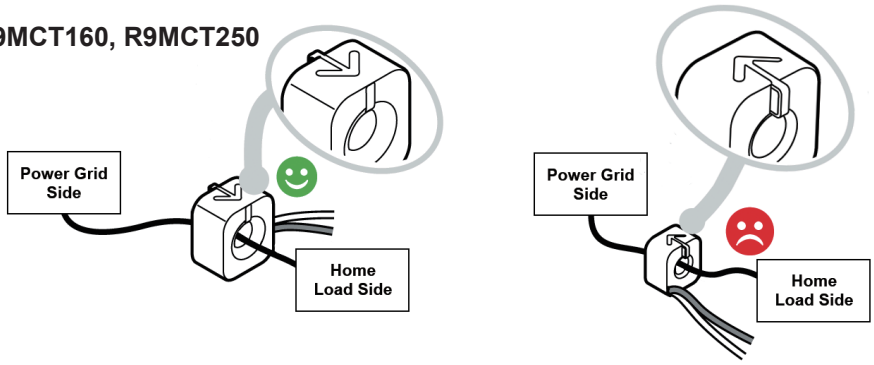
NOTE:

- When installing the CT on the cable, pay attention to the correct direction of the phase in relation to the source. Wrong direction generates negative outputs (negative energy).
- While using more than one cable with 1 CT, pay attention to the same direction.

R9MCT80



R9MCT160, R9MCT250



RS485 Port Setup

The Energy sensor is factory-configured with default serial communication settings:

- Protocol = Modbus RTU
- Address = 1
- Baud rate = 19,200
- Data bit = E81 (Even checksum, 8 data bits, 1 stop bit)

Modbus Table

The Energy sensor provides highly accurate measurement data or calculated average value of a second time for the true RMS (root mean square) value for below listed items:

- Voltage (single phase)
- Current per circuit
- Active Power (W) per circuit
- Power factor per circuit
- Frequency

For PowerTag Energy Resi9 + Charge load management feature, we only used Voltage (single phase), Current per circuit and Active Power (W) per circuit register to implement the feature. The Modbus table as below.

Current						
Current L1	Y	3000	A	2	FLOAT32	R
Current L2	Y	3002	A	2	FLOAT32	R
Current L3	Y	3004	A	2	FLOAT32	R
Current L4	Y	3006	A	2	FLOAT32	R
Current L5	Y	3008	A	2	FLOAT32	R
Current L6	Y	3010	A	2	FLOAT32	R
Voltage						
Voltage	Y	3020	V	2	FLOAT32	R
Power						
Active Power L1	Y	3054	kw	2	FLOAT32	R
Active Power L2	Y	3056	kw	2	FLOAT32	R
Active Power L3	Y	3058	kw	2	FLOAT32	R
Active Power L4	Y	3060	kw	2	FLOAT32	R
Active Power L5	Y	3062	kw	2	FLOAT32	R
Active Power L6	Y	3064	kw	2	FLOAT32	R

The corresponding RS485 port setting registers can be found in the Modbus register table, which can be downloaded from the web page: www.se.com.

For more information of PowerTag Energy Resi9, please scan QR code below to get Resi9 Energy Meter Wired – Device user guide for more details in use.

Connectivity with P1 Smart meter

Introduction

The function of P1 smart meter + P1MB gateway + Charge Pro is to implement load management. To enable this feature, you need to conduct commissioning through eSetup. Please refer to Schneider Charge Pro Commissioning Guide BRU9949500 for more details.

P1MB Product Information

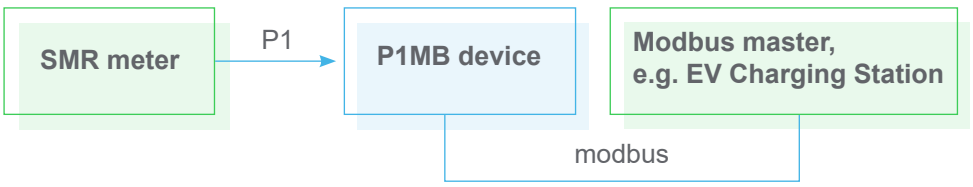
P1MB is a device which interfaces to the P1 port of a smart meter and transforms the data and make it available on its Modbus slave interface to be read out via a Modbus RTU.



The P1MB is connected via an RJ12 connection to the P1 port of a smart meter. The device is powered by the +5V of the P1 port of the connected smart meter. If not available, the P1MB can optionally be powered by an external adapter connected to the DC power interface.

The P1MB enables the request line of the P1 port and captures every second the P1 data in its Modbus memory map. The P1MB acts as a Modbus slave and can be read out by a Modbus RTU master connected to the RS485 interface.

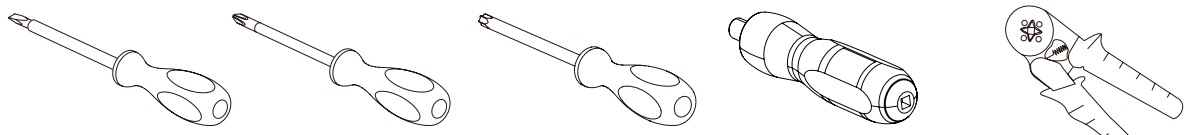
In order to charge an electrical vehicle as quickly as possible, a residential charging station needs to know how much power of the total available grid connection is in use by the household appliances and how much is available for charging. Using the P1MB device, the charging station can get this information through a Modbus interface from a smart meter.



Complete information about the device, including operation, configuration and using the product can ask for:

support@xemex.eu

Tools Supplied by User



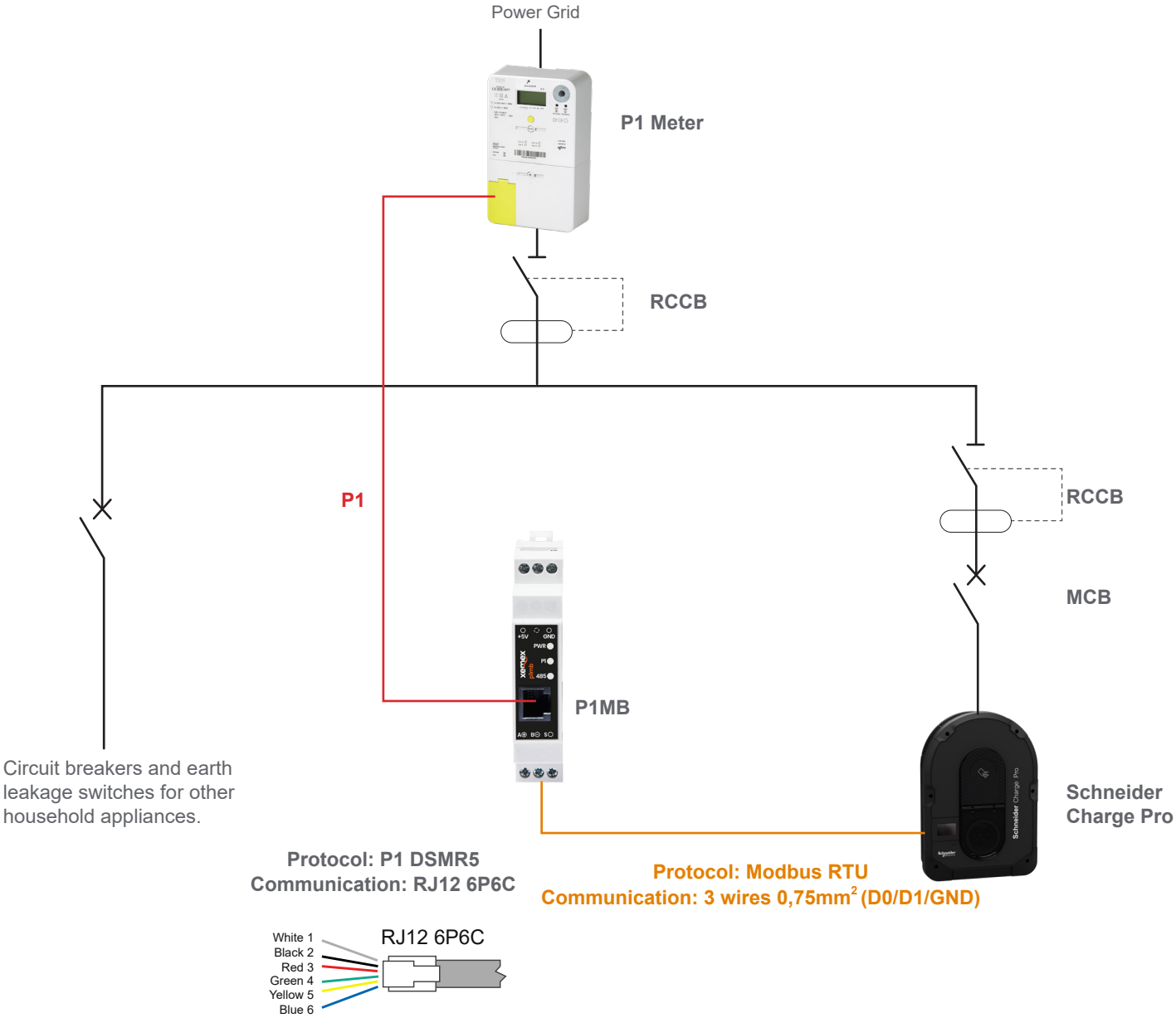
2 mm/0,8 in
4 mm/1,6 in

PH2

T20 security

C 0,5 Nm - 3,5 Nm
Torque driver

Wiring Diagram



D1 Power Interface

Connector Screw terminal connector for 0V and +5V DC
Voltage range: 5V DC, -10%, +10%
Max current consumption: 50 mA
Max cable length: 3 meters
Cable location: indoor + outdoor
Reverse polarity protection: yes

P1 Interface

Protocol P1 protocol conform DSMR5
Max cable length: 3 meters
Cable location: indoor
Connector RJ12 – 6 pins
Pin definition:

Pin #	Signal name	Description	Remark
1	+5V	+5V power supply	Power **input** for P1MB device
2	Data Request	Data Request	**Output** for P1MB device
3	Data GND	Data ground	
4	n.c.	Not connected	
5	Data	Data line	**Input.** Current source PU.
6	Power GND	Power ground	

RS485 Port Setup

Connector Screw terminal connector for A, B and Shield
Bus termination 120 Ohm, switchable on/off
Protocol Modbus RTU over RS485
Max cable length: 100 meters
Cable location: indoor + outdoor

The P1MB is factory-configured with default serial communication settings:
• Protocol = Modbus RTU
• Address = 16
• Baud rate = 9600
• Data bit = 8E1 (Even checksum, 8 data bits, 1 stop bit

Modbus Table

For P1 Smart meter + P1MB + Charge load management feature, we only used Voltage per phase, Current per circuit and Active Power (W) per circuit register to implement the feature. The Modbus table as below,

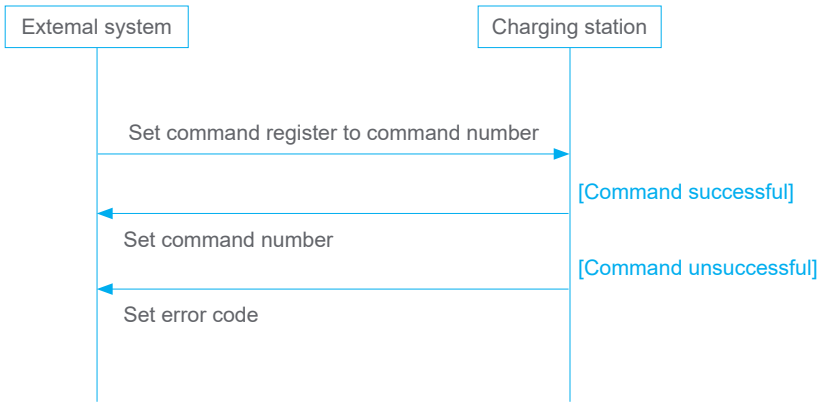
761	2	Instantaneous voltage L1 -V alue	1-0:32.7.0	UINT32
763	2	Instantaneous voltage L2 - Value	1-0:52.7.0	UINT32
765	2	Instantaneous voltage L3 - Value	1-0:72.7.0	UINT32
767	1	Instantaneous current L1 - Value	1-0:31.7.0	UINT16
769	1	Instantaneous current L2 - Value	1-0:51.7.0	UINT16
771	1	Instantaneous current L3 - Value	1-0:71.7.0	UINT16
773	2	Instantaneous active power (+P) L1 - Value	1-0:21.7.0	UINT32
775	2	Instantaneous active power (+P) L2 - Value	1-0:41.7.0	UINT32
777	2	Instantaneous active power (+P) L3 - Value	1-0:61.7.0	UINT32
779	2	Instantaneous active power (-P) L1 - Value	1-0:22.7.0	UINT32
781	2	Instantaneous active power (-P) L2 - Value	1-0:42.7.0	UINT32
783	2	Instantaneous active power (-P) L3 - Value	1-0:62.7.0	UINT32

Connectivity with external energy management system

Supported Commands

Command

Command sequence between external system and charging station:

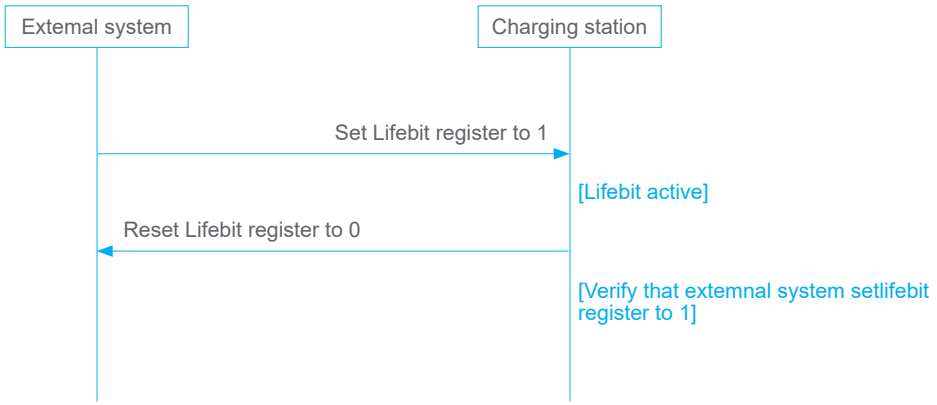


Commands list:

- 3 = STOP_CHARGE = command that stops an ongoing charging session.
- 7 = SUSPEND_CHARGE = command that suspends an ongoing charging session.
- 8 = RESTART CHARGE = command that restarts a suspended charging session.
- 9 = REBOOT = command that restarts the charging station.
- 40 = SET_ AVAILABLE = command that switches charging station to available status.
- 41 = SET_UNAVAILABLE = command that switches charging station to unavailable status. If a charge is in progress, then charging station will turn unavailable at the end of the charging session.

Lifebit

The Lifebit data allows the monitoring of the communication between external system and charging station, it is activated as described in the following sequence:



To deactivate the Lifebit data, the external system sets Lifebit data register to 2.

When activated, Modbus communication is considered as lost if Lifebit data is not refreshed within configured communication timeout.

Schneider Charge Pro Modbus TCP Interface

Schneider Charge Pro Modbus TCP interface can be used to limit the charging power of thecharging station.

This limitation is managed as follows:
• The external system writes current setpoint at address 4004. The maximum current setpoint sent by the charging station to the vehicle is limited by this value. Any setpoint change is considered with max. delay of 15 seconds.

• Additionally, in case of communication loss between the charging station and the external system, a default current limitation is applied: this limitation is setby writing register 4006 for both single phase and triphase charging.

• The Server ID is 255.
NOTE: The detection of communication loss is managed through the Lifebit data, *page 16*.

Registers

All exchanged data through Modbus interface is refreshed every second.
The table below contains the list of Modbus data formats.
NOTE: A request to read a register address that is not in the following table triggers the **Illegal data address** exception code.

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.
Float32	IEEEFloat or F32-4321 A 32-bit IEEE floating point value returned in two consecutive 16-bit registers. The high-order word is returned in the first register and the low order word in the second. The 4 bytes are returned in 4-3-2-1 format. SwappedFloat or F32-2143 A 32-bit IEEE floating point value returned in two consecutive 16-bit registers. Contrary to F32_4321, the high-order word is returned in the second register and the low order word in the first. The 4 bytes are returned in 2-1-4-3 format.

Address	Function code	Access	Register Name	Type	Number of bytes	Units	Description
1	0x04	R	EV-state	UINT16	2	-	State of the vehicle S1 (EV is connected) and S2 (load is authorized) + detected error 0: State E: 0V 1: State F: Not available (-12V) 2: State A1: Available, not ready to charge (12V) 3: State B1: EV connected, not ready to charge (9V) 4: State C1: Charging EV, stopping charge requested by EVSE (6V) 5: State D1: Charging EV with ventilation required, stopping charge requested by EVSE (3V) 6: State A2: Available, ready to charge (12V PWM) 7: State B2: EV connected, ready to charge (9V PWM) 8: State C2: Charging EV (6V PWM) 9: State D2: Charging EV with ventilation required (3V PWM) 10: State Control Pilot Wire invalid 11: State Control Pilot Wire Symetric - Fault on the control circuit
150	0x04	R	OCPP status	UINT16	2	-	OCPP state of the charging station 0: Init 1: Available 2: Preparing 3: Charging 4: SuspendedEV 5: SuspendedEVSE 6: Finishing 7: Reserved 8: Unavailable 9: Faulted
2999	0x04	R	Current Phase 1	float32	4	A	Current on phase 1
3001	0x04	R	Current Phase 2	float32	4	A	Current on phase 2
3003	0x04	R	Current Phase 3	float32	4	A	Current on phase 3
3027	0x04	R	Voltage Phase 1	float32	4	V	Voltage on phase 1
3029	0x04	R	Voltage Phase 2	float32	4	V	Voltage on phase 2
3031	0x04	R	Voltage Phase 3	float32	4	V	Voltage on phase 3
3053	0x04	R	Power Active Phase 1	float32	4	KW	Active power on phase 1
3055	0x04	R	Power Active Phase 2	float32	4	KW	Active power on phase 2
3057	0x04	R	Power Active Phase 3	float32	4	KW	Active power on phase 3
3059	0x04	R	Power Active Phase TOT	float32	4	KW	Total active power
3067	0x04	R	Power Reactive TOT	float32	4	Kvar	Total reactive power
3075	0x04	R	Power Apparent TOT	float32	4	kVA	Total apparent power
3083	0x04	R	Power factor	float32	4	-	Power factor
3109	0x04	R	Frequence	float32	4	Hz	Frequency
3203	0x04	R	Energy Active TOT	int64	8	Wh	Total active energy counter
3219	0x04	R	Energy Reactive TOT	int64	8	kVARh	Total reactive energy counter

Address	Function code	Access	Register Name	Type	Number of bytes	Units	Description
4000	0x10	R/W	Lifebit	UINT16	2	-	Lifebit data enables monitoring of communication between the external system and the charging station. 0: Charging station sets the lifebit to 0 periodly if it is 1 1: External device sets the lifebit to 1 periodly if it is 1 2: To deactivate the Lifebit data, the external system sets Lifebit data register to 2. When activated, Modbus communication is considered as lost if Lifebit data is not refreshed within configured communication timeout.
4001	0x10	R/W	Set Command	UINT16	2	-	Commands list: 3 = STOP_CHARGE = command that stops an ongoing charging session. 7 = SUSPEND_CHARGE = command that suspends an ongoing charging session. 8 = RESTART_CHARGE = command that restarts a suspended charging session. 9 = REBOOT = command that restarts the charging station. 40 = SET_AVAILABLE = command that switches charging station to available status. 41 = SET_UNAVAILABLE = command that switches charging station to unavailable status. If a charge is in progress, then charging station will turn unavailable at the end of the charging session.
4004	0x10	R/W	Set Point	UINT16	2	A	Remote energy management setpoint in Amps
4006	0x04	R/W	Degraded Set Point	UINT16	2	A	Degraded setpoint applied when the Modbus communication is lost Note, if the communication is lost and this value is larger than the value of Setpoint, then the Setpoint value is selected as the maximum value for continuing the charging current. In all other cases, this value takes effect.
4007	0x04	R	Contactor charging time	UINT32	4	s	Current charging time (duration since contactor closed)
4009	0x04	R	Session charging time	UINT32	4	s	Current session charging time (duration since transaction started)
4012	0x04	R	Session energy	float32	4	Wh	Consumed energy during charging session
4014	0x10	R/W	Lifebit detection time	UINT16	2	s	The delay to raise a communication loss shall be configurable via External Device (PME/ EMS/...) Range : [10 - 300] seconds Resolution : 1 seconds Default value: 60 seconds
4015	0x10	R/W	Status after connection loss	UINT16	2	-	The status of the charging station while charging after connection loss 0: Charging (by default, with Degraded Set Point) 1: SuspendedEVSE 2: Finishing 3: Faulted Note, the status of the charging station will be not change while non-charging after connection loss
4016	0x10	R/W	Type of External Devices	UINT16	2	-	The type of the external devices 0: PME 1: EMS 2: ECC 3: Others
4022	0x04	R	Error code bitfield	UINT32	4	-	Currently raised error codes

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NAT3046700-03