PRISM MQTT

User's manual

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Notes

The information in this manual may change over time. To get the latest version of the documentation scan the QR Code or go to https://silla.industries/en/docs/

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(!) **Warning prism Solar Duo**

You will find some references to Prism Solar Duo. Please be aware that <u>the product is no longer available.</u> Settings are not subjected to variations.

USER MQTT

MQTT is a standard messaging protocol designed for situations where low impact is required and where bandwidth is limited. Because of these characteristics, it is a widely used communication protocol in IoT and home automation devices. Prism operates as an **MQTT client**, posting and receiving messages through the broker configured by the user.

Setup - Connecting to Prism

In order to use the MQTT-related features, configuration must be performed by connecting to Prism:

- using a smartphone, tablet or PC, search for Prism among the available WiFi networks.
- using a smartphone, tablet or PC, search for Prism among the available WiFi networks

Setup - Login

From the browser of the device connected to Prism, browse to the address http://192.168.8.1/settings and log in using the "installer" credentials on the sticker on the manual received with Prism.

Setup - MQTT settings

Once you are logged in, go to **Prism -> Settings**
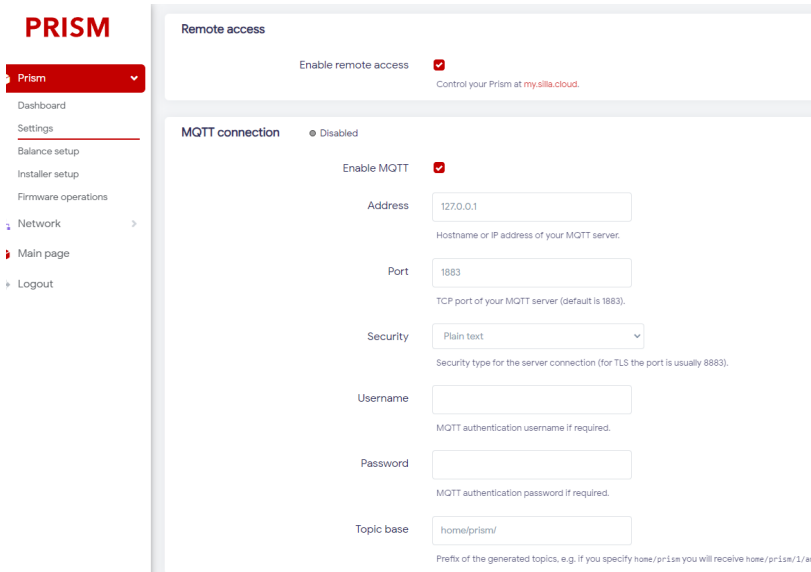
The "**MQTT connection**" section will be displayed, showing the following settings:

- **Enabled**: enables/disables the MQTT connection.
- Once enabled, the following options will be shown.
- **Address:** IP address or hostname of the MQTT server
- **Port:** TCP port of the MQTT server.
- **note.** the default value is 1883
- **Username:** authentication user name, if required
  Password: authentication password, if required
- **Topic base:** prefix used for all topics.

note. in the manual we will refer to this value as **< topic_base>**

MQTT Topic - Introduction

In the manual, values between two angle brackets, e.g., "<topic_base>," indicate variables that should be specified according to the context. Variable values are described below.

<topic_base>

It corresponds to the value specified in the MQTT settings, as described in section Configuration - MQTT Settings.

<port_number>

It corresponds to the number of the charging port. Prisms with a single cable will have only port 1 while Prism DUOs will have the following port numbers.:

1. for the left cable
2. for the right cable

The following sections outline the various MQTT topics that can be used for Prism, divided into categories.

Status Topics

In these topics, there are messages regarding the status of Prism. Messages are sent only when the specified value changes, so in case of constant values no further messages will be received.

hello

In this topic, a message is posted on the start of the communication containing information about the version of Prism

Example: <topic_base>/hello "Cartender-Prism 2.0c (evsemd v1.1.1)"

<port_number>/state

It reports the current status of the Prism:

1. **idle:** no vehicle connected
2. **waiting**: connected vehicle, waiting to recharge
3. **charging**: vehicle charging
4. **pause**: charging paused

Example: <topic_base>/1/state 3

Indicates that port 1 is charging.

<port_number>/volt

Reports the voltage currently measured by Prism, in volts [V].

Example: <topic_base>/1/volt 220.0

<port_number>/w

Reports the power currently delivered by the charging port, in watts [W].

Example: <base_topic>/1/w 1760.0

<port_number>/amp

Reports the current currently delivered by the charging port, in milliamps [mA].

Example: <topic_base>/1/amp 8000

<port_number>/pilot

Reports the current delivered to the car, in amperes [A].

Example: <topic_base>/1/pilot 8

<port_number>/user_amp

Reports the current set by the user, in amperes [A].

Example: <topic_base>/1/user_amp 8

<port_number>/session_time

Reports the duration of the ongoing charging session, in seconds

[s]. Example: <topic_base>/1/session_time 3600

<port_number>/wh

Reports the energy supplied by the charging port during the ongoing session, in watt-hours [Wh].

Example: <topic_base>/1/wh 1760.0

<port_number>/wh_total

Reports total energy supplied by Prism, in watt-hours [Wh].

Example: <topic_base>/1/wh_total 8050

<port_number>/error

Reports the error code related to the port. The value "0" indicates that there is no error.

Example: <topic_base>/1/error 0

<port_number>/mode

Reports the modality:
1. **Solar**
2. **Normal**
3. **Pause**
7. **Suspended charging because of balancing** (insufficient power available)

Example: <topic_base>/1/mode 2

Indicates that port 1 is in "Normal" mode

<port_number>/input/touch

This topic reports the events related to the output touch button, expressed as a sequence of the button press durations. If the button is pressed several times consecutively, it is recognized as a **touch sequence event.** The sequence ends when the button is not pressed for at least 0.8 seconds or the button is pressed consecutively more than 30 times.

> *Examples:*

- *<topic_base>/1/input/touch "1"*

   The button was pressed quickly once

- *<topic_base>/1/input/touch "1,1,1"*

   The button was pressed quickly three times

- *<topic_base>/1/input/touch "3"*

   The button was pressed for three seconds

- *<topic_base>/1/input/touch "1,1,3"*

   The button was quickly pressed twice, then pressed and held for 3 seconds

energy_data/power_grid

It reports the power currently drawn from the grid, in watts [W]. Positive values indicate an import from the grid, while negative values indicate an export to the grid.

Example: <topic_base>/energy_data/power_grid 2800

It indicates that the system is taking 2.8 kW from the grid

Command Topics

This section lists the command topics. by posting on these topics you can control some of the parameters of the charging process.

<port_number>/command/set_mode

Set the Prism mode to:

1. **Solar**
2. **Normal**
3. **Pause**

Example: <topic_base>/1/command/set_mode 2

Port 1 is set to "Normal" mode.

<port_number>/command/set_current_user

It sets the maximum charging current specified by the user, in amperes [A]. It uses whole numbers without decimal digits.

Example: <base_topic>/1/command/set_current_user 8

Port 1 current is set to 8 amps.

note. This command is equivalent to pressing the + and - buttons from the Prism web interface.

note. Do not use this command to implement dynamic current control logic. Instead, use the topic <port_number>/command/set_current_limit.

<port_number>/command/set_current_limit

It sets the charging current limit, in amperes [A]. It uses integers with one decimal digit. This command can be used to **implement custom balancing logic.**

Example:

<topic_base>/1/command/set_current_limit 9.2

Command Response Topics

A message is posted in these topics whenever a command is executed.

commandresult/<command>/success

A message is sent to this topic when <command> is executed correctly.

> *Example:*

- command is sent

    <topic_base>/1/command/set_current_limit 9.2

- if it is executed correctly, the message is published

    <topic_base>/commandresult/set_current_limit/success

commandresult/<command>/error

A message is sent to this topic when <command> is not executed correctly.

> *Example:*

  - command is sent

<base_topic>/1/command/set_mode 54

  - viene pubblicato il messaggio

    <base_topic>/commandresult/set_mode/error "Bad syntax, mode must be [0-9]"

Topic in presence of Powerwall

The topics below are only available if THE communication with the **Powerwall** is enabled. For more information, see the Prism user manual, available at. https://silla.industries/en/docs/.

energy_data/power_solar

> Report the power currently produced by the photovoltaic system, in watts [W].
>
> *Example: <topic_base>/1/power_solar 3000*

energy_data/power_house

> This value is only available if **Powerwall** is enabled. For more information, see the Prism user manual, available at https://silla.industries/en/docs/. Reports the power currently consumed by the household system, in watts [W].
>
> *Example: <topic_base>/1/power_solar 3000*