



LARA
LIGHTWARE ADVANCED
ROOM AUTOMATION

LARA Driver for GUDE Power Distribution Units

feat.

APPLICATION NOTES



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Document Information

Document revision: **v1**
Release date: 2026-08-12
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LARA Driver for GUDE Power Distribution Unit

The chapter describes the uploading, handling and customizing of the LARA driver for GUDE EPC unit as follows:

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1.1. Introduction

The GUDE EPC Driver for LARA 2.0 provides limited control and status monitoring of a GUDE EPC unit for integration into control systems using the Lightware LARA platform.

The driver is not intended to replace GUDE web based configuration interface.

1.2. GUDE EPC Driver Version 1.0.0 Release Notes

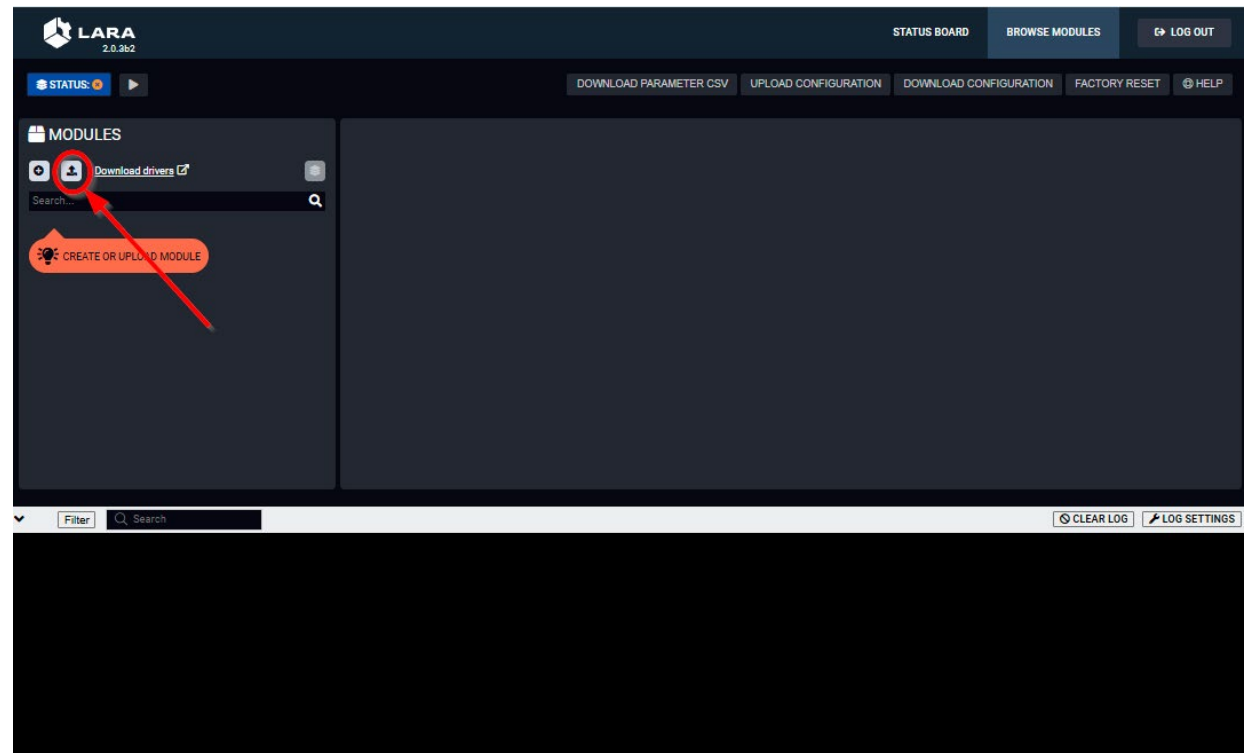
- Compatible with Lightware LARA v2.0.3 or higher.
- Does not handle GUDE external sensors.
- Connection to the GUDE EPC unit is supported via Ethernet (TCP/IP, via Telnet port) and via RS232 serial link

1.3. Installation

1.3.1. Uploading the GUDE EPC Driver Module into LARA

Download the GUDE Epc driver for LARA 2.0 from the Lightware website.

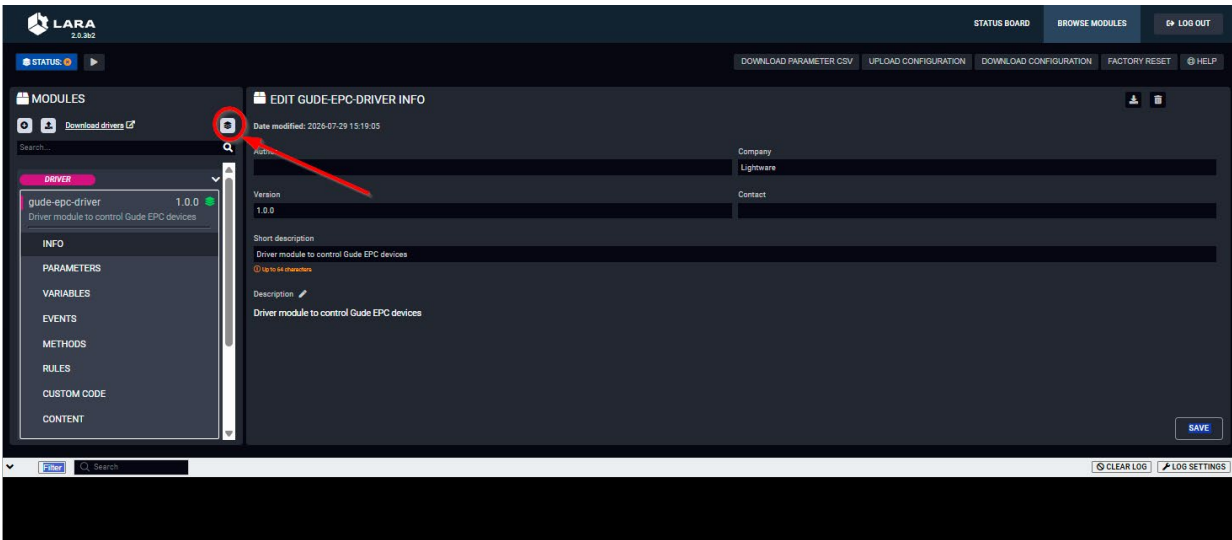
Using the LARA GUI of the Lightware unit containing LARA upload the driver in the Browse module window.



Driver uploading in LARA

1.3.2. Creating a Driver Instance

After the GUDE Epc driver has been uploaded, an instance of it has to be created for each GUDE EPC unit to be controlled, with setting the instance parameters detailed in the GUDE EPC driver settings chapter.



Creating driver instance in LARA

1.4. Required Settings on the GUDE EPC Unit

To allow the GUDE EPC LARA driver to connect to the GUDE EPC unit, the following configuration settings have to be done on the GUDE EPC unit using the GUDE web admin interface.

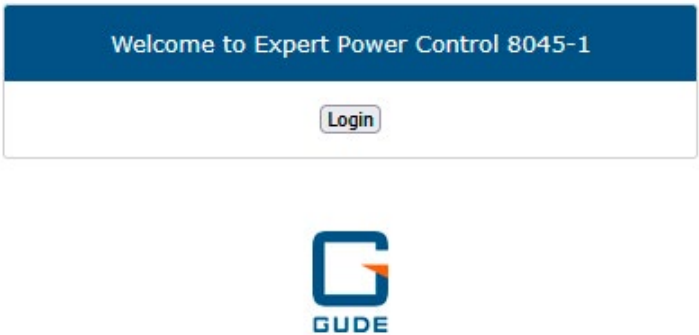
1.4.1. Connecting to the GUDE EPC Unit Web Interface

The web interface of the GUDE unit can be accessed using its IP address:

http://<IP-address>

where the IP-address is the IP address of the GUDE EPC unit.

After successful connection the login page of the GUDE EPC unit web interface appears:



GUDE web interface - login window

After the successful login initiated by the **Login** button, the configuration settings can be done.

1.4.2. Communication Settings

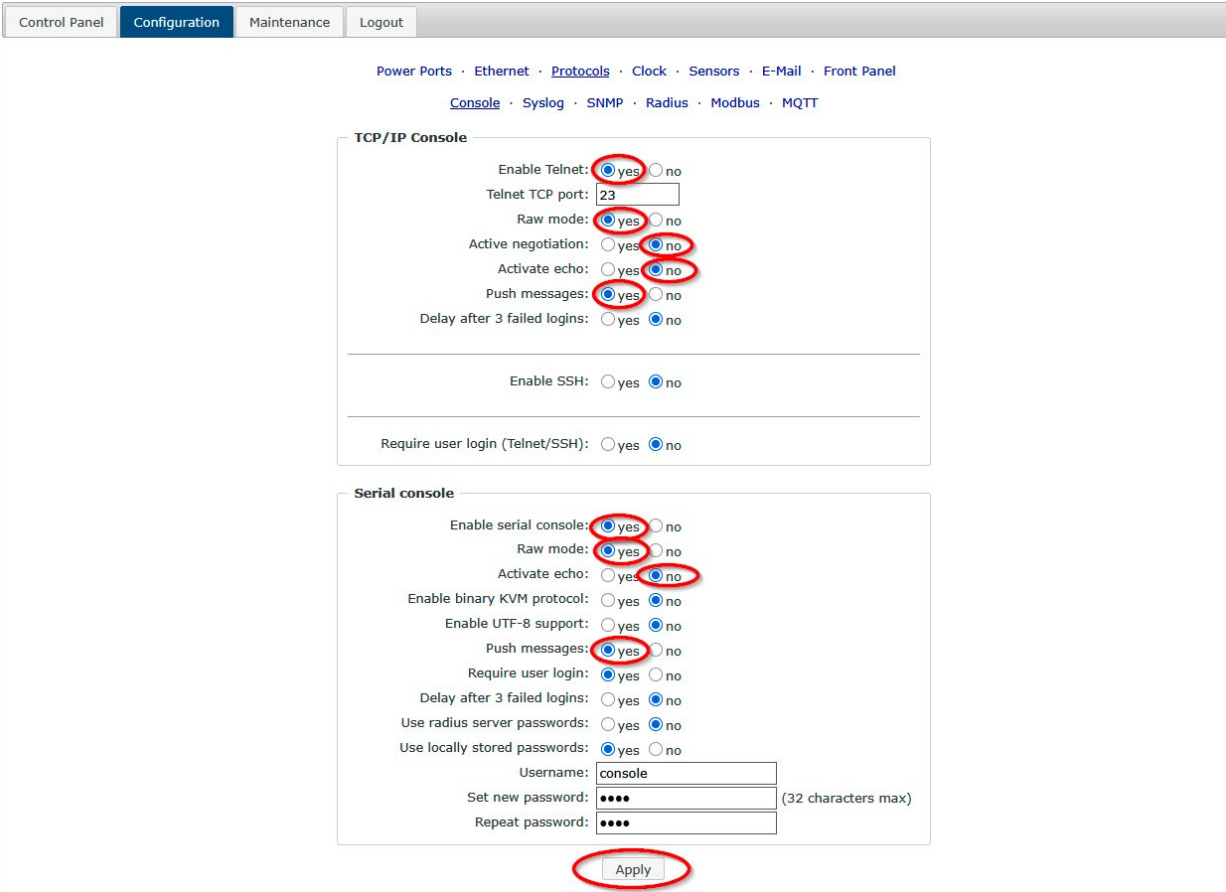
On the page Configuration/Protocols the following settings are required:

TCP/IP Console Settings

- Enable Telnet: yes
- Raw mode: yes
- Active negotiation: no
- Active echo: no
- Push messages: yes

Serial Console Settings

- Enable serial console: yes
- Raw mode: yes
- Active echo: no
- Push messages: yes



Configuration page of the GUDE web interface highlighted with the correct settings

ATTENTION: Do not forget to push the **Apply** button after the settings are done.

The authorization parameters for both type of console connections can also be set here.

1.5. Sensor Settings

The GUDE driver handles the GUDE monitoring push messages related to the line and if available, the outlet port sensors of the GUDE EPC unit.

In order to receive and handle sensor related, value threshold triggered monitoring push messages, the monitoring values have to be set for the relevant sensors, and the messages have to be enabled for the sensor.

This can be done via the Configuration/Sensors page of the GUDE web interface.

The following picture shows a sensor configuration example:

Control Panel

Configuration

Maintenance

Logout

Power Ports

Ethernet

Protocols

Clock

Sensors

E-Mail

Front Panel

Sensors Config

Sensor: L1 - Meter 1

Sensor Name: Meter 1

Select Sensor Field: Current (A)

Enable value-threshold message trigger: yes no

Maximum value: 30.000 A

Minimum value: 0.010 A

Hysteresis: 0.005 A

Define switching rules for trigger values

Port Names	Above Max	Below Max	Above Min	Below Min
1 Test1_Tap	--	--	--	--
2 Macska	--	--	--	--
3 Power Port	--	--	--	--
4 Power Port	--	--	--	--
5 Power Port	--	--	--	--
6 Power Port	--	--	--	--
7 Power Port	--	--	--	--
8 Power Port	--	--	--	--
9 Power Port	--	--	--	--
10 Power Port	--	--	--	--
11 Power Port	--	--	--	--
12 Power Port	--	--	--	--

Clear All Settings

Set/Clear All

Set/Clear All

Set/Clear All

Set/Clear All

Enable time-interval message trigger: yes no

Enable value-delta message trigger: yes no

Message channels: Syslog SNMP Em Console

MQTT: normal MQTT message

Beeper: Beeper mode : continous

Flashing display

Misc sensor options

Min/Max measurement period: 24 Hours

Allow beeper for AC alarms: yes no

Allow beeper for other alarms: yes no

Temperature unit: °C

Pressure unit: hPa

Apply

Configuration page of the GUDE web interface - sensor settings

1.6. GUDE EPC LARA Driver Settings

The GUDE EPC driver instance parameters can be edited on the instance parameter page.

Open the Edit instance parameter window from the Status board showing the instances of the modules:

LARA

2.0.3b2

STATUS BOARD

BROWSE MODULES

LOG OUT

STATUS

DOWNLOAD PARAMETER CSV

UPLOAD CONFIGURATION

DOWNLOAD CONFIGURATION

FACTORY RESET

HELP

INSTANCES

Resource usage

DRIVER

Instance: Gude

Module: gude-epc-driver

Instance: Gude_1141

Module: gude-epc-driver

LOGIC

Instance: Testlogic_Gude

Module: Testlogic_new

Filter

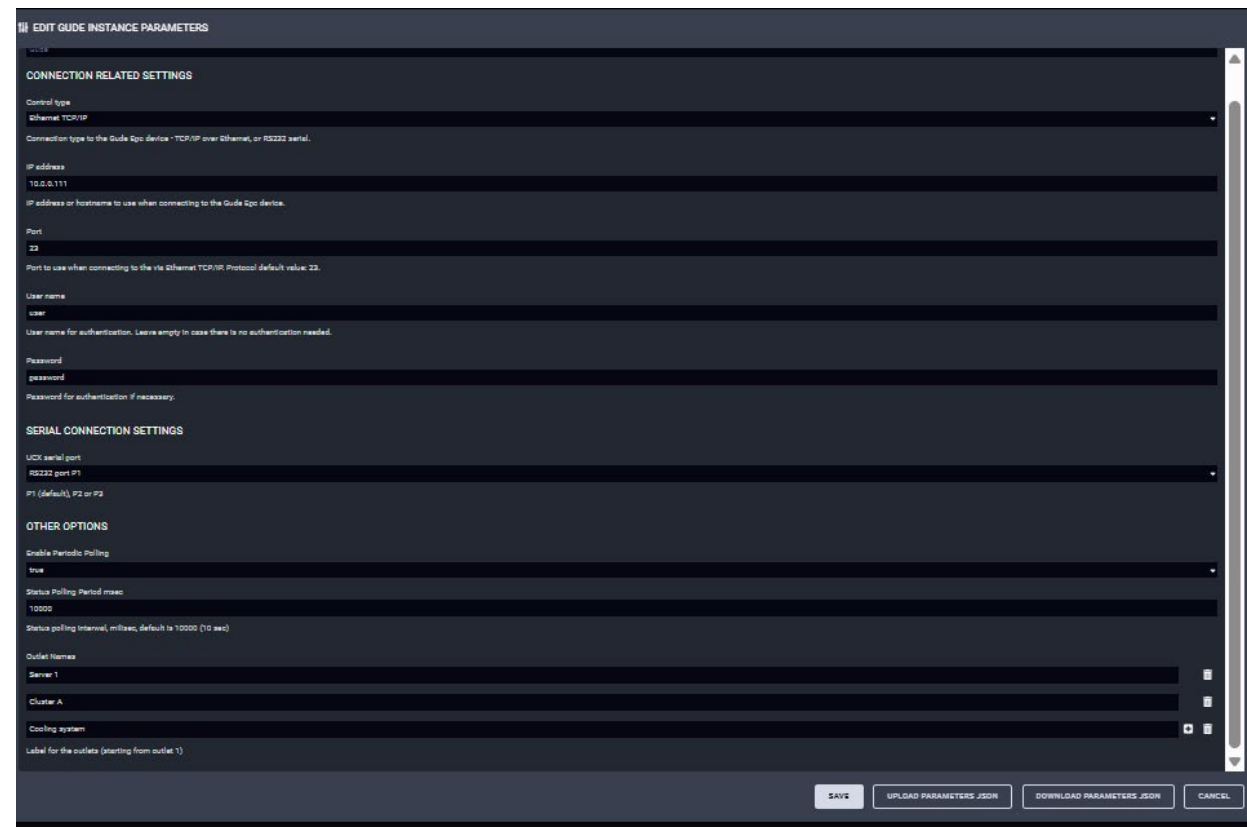
Search

CLEAR LOG

LOG SETTINGS

LARA status board

The Edit <instance_name> instance parameters window for the GUDE driver instance opens like this:



GUDE driver instance parameters in LARA

The following parameters can be set for the GUDE EPC LARA driver instance:

1.6.1. Parameters

Instance name

It has to be a unique instance name containing no space. In an integration this will be used to refer to the instance within a logic module.

Connection Related Settings

Control Type

One of the following connection types can be selected:

- Ethernet TCP/IP
- RS 232 serial

The following connection settings need to be configured based on the Control type selection in accordance with the control setup.

IP Address

IP address of the GUDE EPC unit for the Ethernet TCP/IP connection.

For the RS232 serial control type this parameter has to be empty, except:

In case the TCP/Serial gateway for the RS232 control is running on a Taurus different to the Taurus running this LARA configuration, it has to contain the IP address of the Taurus running the TCP/Serial gateway.

Port

Port number only for Ethernet TCP/IP connection. Default value: 23 (Telnet)

Serial Connection Settings

UCX Serial Port

The RS232 serial port of the Taurus UCX unit for the RS232 Serial connection can be set here. The selectable options are:

- RS232 port P1
- RS232 port P2
- RS232 port P3

The GUDE EPC driver configures the parameters of the selected serial port automatically at startup in case the RS 232 serial connection type is selected.

Authorization Settings

User Name

Login user name for the selected connection type on the GUDE EPC unit.

Password

Login password for the selected connection type on the GUDE EPC unit.

Other Options

Enable Periodic Polling

- **false:** periodic status polling is not enabled. The default value. Periodic status polling can be started and stopped by using the startStatusPolling and stopStatusPolling driver methods
- **true:** periodic status polling is enabled. If set, periodic status polling starts automatically after the successful connection and login to the GUDE EPC unit.

Status Polling Interval Msec

Status polling interval for periodic status polling. Default value is 10000 msec (10 sec).

Outlet Names

- Outlet names can be set using this list type parameter.
- Names can be added to the list by the + sign
- Outlet name list example



GUDE driver instance parameters - Outlet names

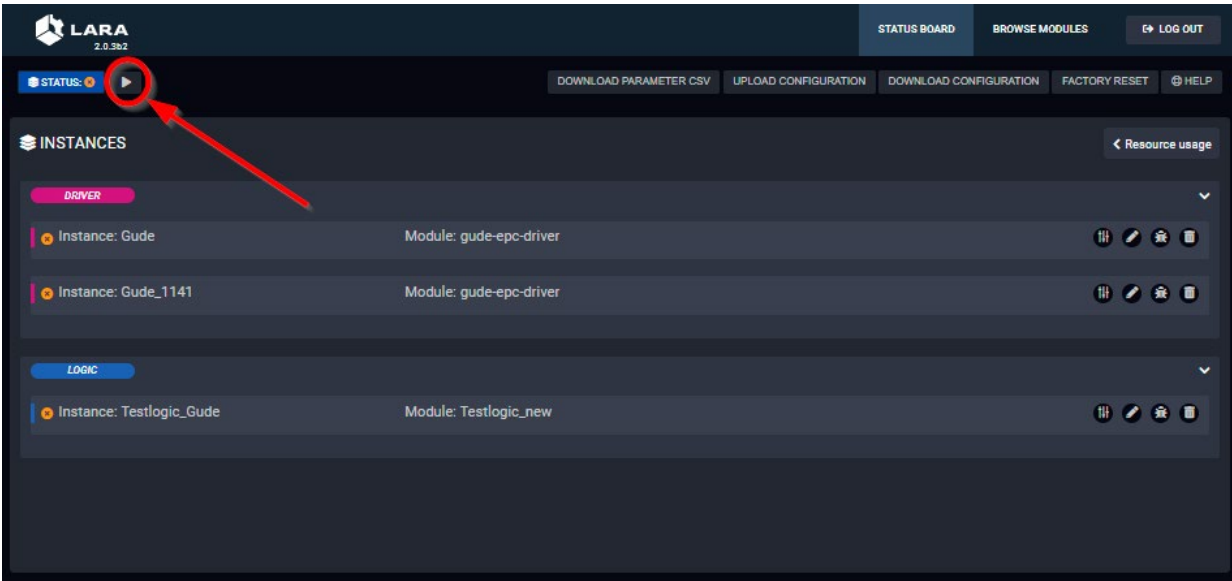
Use name Pn for port n if you do not want to name it here (eg. P3 for outlet 3 as the example shows). The driver changes the default 'Power Port' outlet port label at startup to Pn on outlet port n for each outlet port (eg. P2 on outlet port 2). Portnames that had already beenchanged from the default 'Power Port' to a different name on the GUDE unit will not be changed.

1.6.2. Applying the Instance Parameters

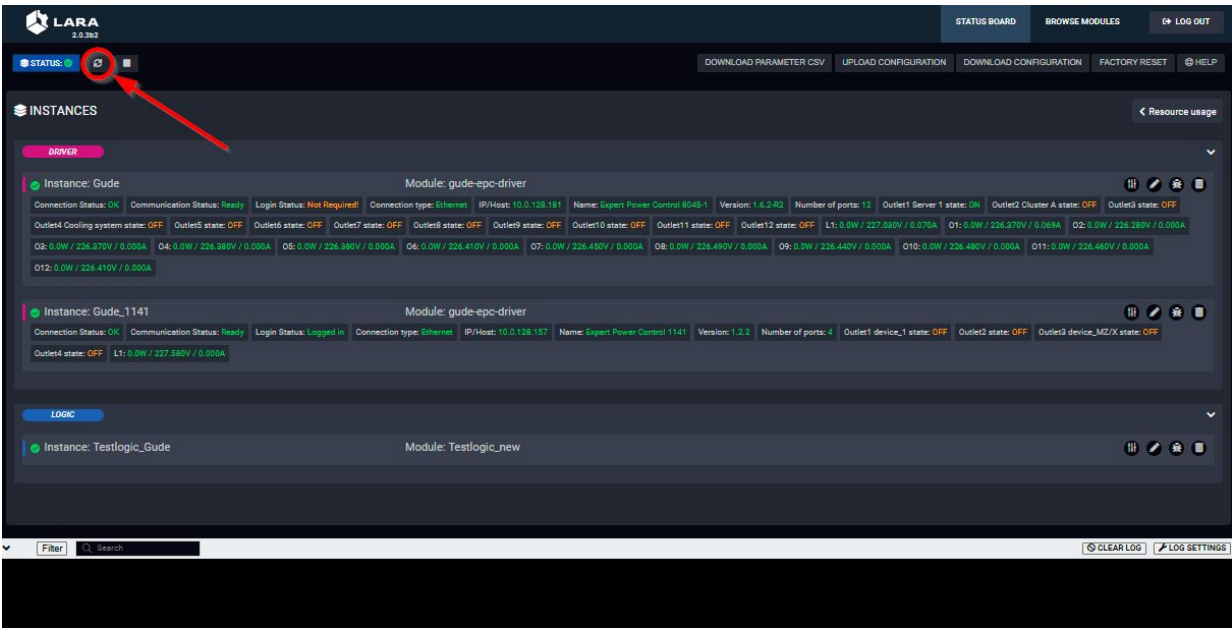
After setting all the necessary instance parameters, the instance parameter set can be saved by the **Save** button, and optionally downloaded by the „Download parameter JSON” for future reference.

A parameter list downloaded formerly can be uploaded using the **Upload parameter JSON** button.

The LARA configuration has to be started/restarted in order to use the instance parameters after changes:



LARA status bar - starting configuration



LARA status bar - restarting configuration

1.6.3. List of the GUDE EPC LARA Driver Features

Methods

The active methods provided by the GUDE EPC LARA driver are listed below with the method parameters.

- sendCommand
 - command
- openTcpConnection
- closeTcpConnection
- startStatusPolling
- stopStatusPolling
- getunitDetails
- powerOn
 - outlet
- powerOff
 - outlet
- powerCycle
 - outlet
- powerOnMultiple
 - outlets
- powerOffMultiple
 - outlets
- powerOnAll
- powerOffAll
- requestAllOutletStatus
- requestLineSensorStatus
 - inlet
- requestAllLineSensorStatus
- requestOutletPortSensorStatus
 - outlet
- requestAllOutletPortSensorStatus

Events

The active events provided by the GUDE EPC LARA driver are listed below. Event information details are provided as event parameters that can be used in logic module rules.

- communicationStatusUpdated
 - status

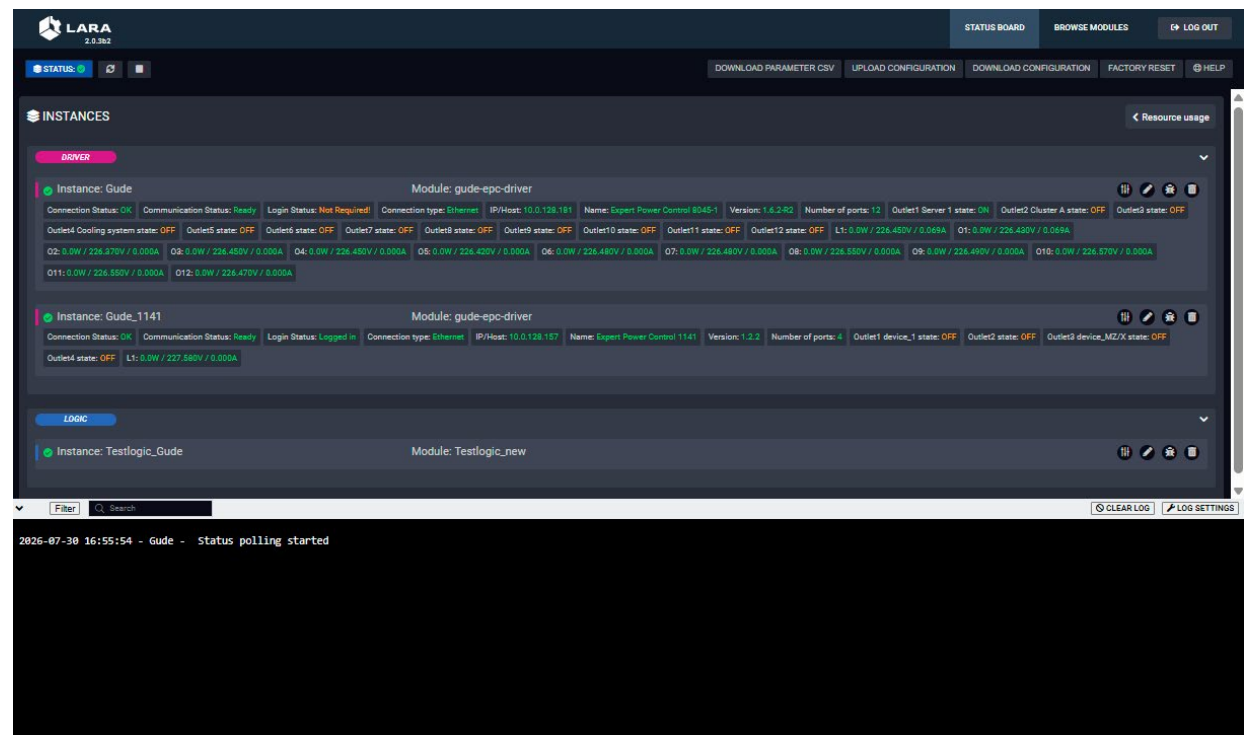
- loginStatusUpdated
 - status
- commandError
- thresholdAlert
 - sensorType
 - outlet
 - metric
 - value
 - boundary
- thresholdRestored
 - sensorType
 - outlet
 - metric
 - value
 - boundary
 - boundary2
- frameReceived
 - frame

Status Bar Information

The status bar of the GUDE EPC driver instance on the LARA Status Board shows the following information:

- Connection Status
- Communication Status
- Login Status
- Connection type
- IP/Host
- UCX port when using RS232 serial control type
- GUDE EPC unit details: Name, Version, Number of ports
- Outlet port On/Off status using outlet port numbers and names set in the instance parameters. Field color is green when the outlet port status is ON and orange when it is OFF.
- Line sensor power, voltage and current values, with red color in case any threshold alert is valid for the line input. After receiving a threshold restore message, this field changes back to green color.
- Outlet port sensor power, voltage and current values in case these sensors are available, with red color in case any threshold alert is valid for the port. After receiving a threshold restore message, this field changes back to green color.

Status bar example when a LARA configuration containing GUDE EPC driver instances is running:



LARA status bar with running GUDE driver instances

1.6.4. Driver Integration

The driver can be integrated into a LARA configuration that contains one or more logic module.

A logic module can use the events and event data emitted by the GUDE EPC driver in its rules to trigger actions. It also can use the methods of the GUDE EPC driver in its rules and methods as part of actions.

1.7. References

Lightware:
<https://www.lightware.com/en>

GUDE:
<https://gude-systems.com/en/>