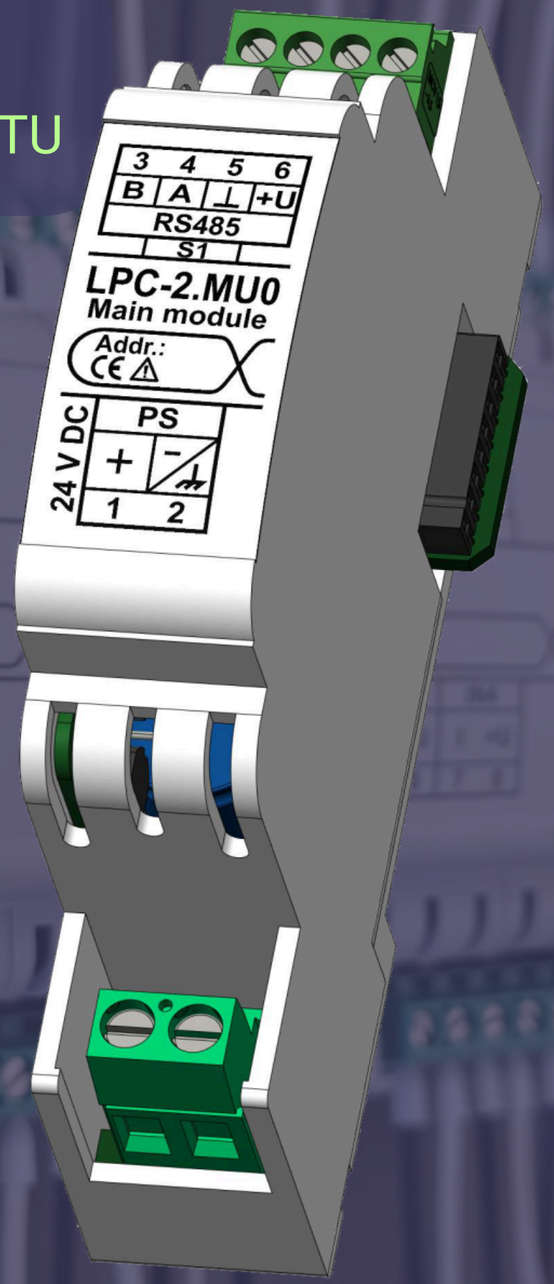
LPC-2.MU0

Remote I/O Main module, Modbus RTU



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LIVING SYSTEMS

INTRODUCTION

LPC-2.MU0 Remote I/O Main module, Modbus RTU – expand your automation system with ease

The LPC-2.MU0 module operates as a Modbus RTU Slave (RS-485) device, providing a robust and flexible solution for remote expansion with configuration of Smarteh LPC-2 I/O modules. Designed for seamless integration, it is fully compatible with Smarteh LPC-2 PLCs, LPC-3 touch panels, and any other Modbus RTU Master devices.

Seamless communication & Scalable expansion

The LPC-2.MU0 module acts as a bridge between the Modbus RTU Master device and LPC-2 I/O configuration, enabling smooth and efficient data exchange.

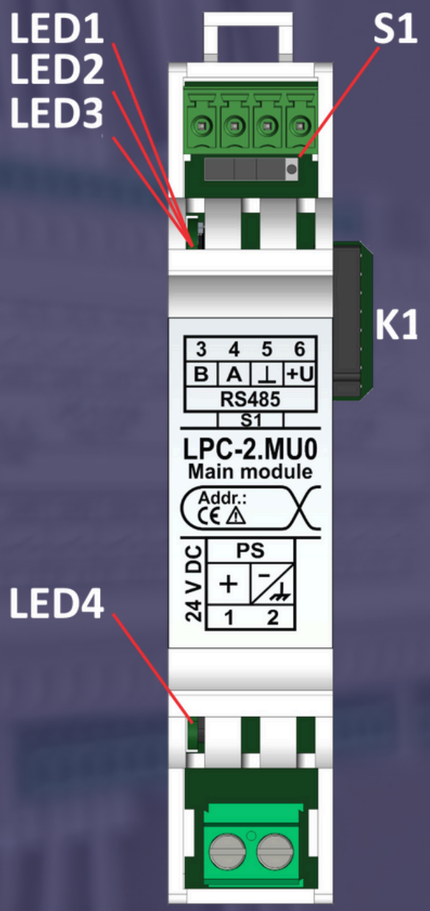
LPC-2.MU0 module powers and connects up to 7 Smarteh LPC-2 I/O modules in one LPC-2 I/O configuration, ensuring flexibility on LPC-2 I/O modules selection and system-wide efficiency.

Whether you need to expand your LPC-2 I/O configuration, create remote I/O connections, or enhance system scalability, the LPC-2.MU0 Main module delivers unmatched flexibility and performance.

Up to 32 LPC-2.MU0 module I/O configurations can be connected to a Modbus RTU Master device, allowing centralized management of thousands of I/O signals.

Compact, reliable, and efficient

Designed with a slim, space-saving profile, the LPC-2.MU0 module is perfect for installations where space is limited. Powered by a 20–28 V DC external power supply, it ensures stable operation while four built-in LEDs provide instant status updates on power supply and Modbus RTU communication, enabling real-time device status monitoring.



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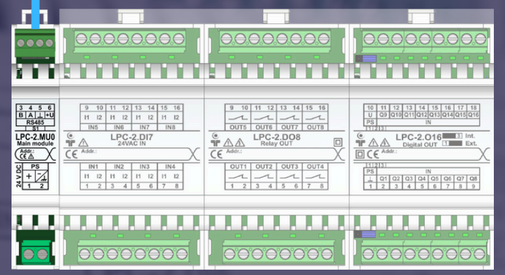
SMARTEH VS. CONVENTIONAL REMOTE I/O SYSTEM EXAMPLE

Conventional remote I/O cabinet

Many Modbus RTU nodes

Smarteh remote LPC-2 I/O cabinet

One Modbus RTU node



- **Price efficient solution for remote LPC-2 I/O modules:**
  - *49 € LPC-2.MU0 Remote I/O Main module, Modbus RTU*
  - *30 - 60 € LPC-2 Digital inputs (Voltage free , 24 V DC, 24 V AC, 230 V AC)*
  - *30 - 80 € LPC-2 Digital outputs (Relay, Transistor, Triac)*
  - *60 - 100 € LPC-2 Analog modules I/Os (0-10V, 4-20 mA, NTC, Pt1000, PWM output, ...)*

All prices are indicative RRP. For accurate pricing, please contact Smarteh sales at: sales@smarteh.si

- **Reduced number of Modbus RTU nodes:** Supports up to 7 LPC-2 I/O modules per LPC-2.MU0 and up to 32 LPC-2.MU0 per Modbus RTU Master module
- **Faster data transfer and refresh rate**
- **LPC-2 I/O signal density:** Centralizes > 1000 of LPC-2 I/O signals across multiple LPC-2.MU0 modules
- **Power supply integration:** LPC-2.MU0 module powers all connected LPC-2 I/O modules directly
- **Ease of use:** Fully integrated with the LPC-2 ecosystem—yet completely open.

KEY FEATURES & BENEFITS

📥 / 📤 Modbus RTU communication

RS-485 half-duplex serial port for Modbus RTU Slave communication, enabling reliable data exchange with Modbus RTU Master device.

⚙️ LPC-2 configuration I/O expansion

Easily extend your Modbus RTU Master automation system by connecting up to 32 LPC-2.MU0 modules with up to 7 LPC-2 I/O modules per each LPC-2.MU0 module configuration.

This allows for expanded LPC-2 I/O configurations beyond the standard Smarteh 7 LPC-2 I/O modules, providing additional functionality for complex control environments.

📡 Remote LPC-2 I/O connection

LPC-2.MU0 module enables remote LPC-2 I/O configurations to connect with LPC-2 PLCs or LPC-3 touch panels or any other Modbus RTU Master device via Modbus RTU over RS-485, ideal for distributed control systems.

🎛️ Termination Switch (S1)

RS-485 termination switch for easy configuration of signal termination with an internal 1.2 kΩ resistor to ensure stable RS-485 network communication.

📦 Compact design

Features a slim and compact design, making it perfect for installation in tight spaces or environments with limited room.

🔲 DIN rail mounting

Designed for DIN EN50022-35 rail mounting, allowing for quick and secure installation in control panels and enclosures.

🔌 Power supply

LPC-2.MU0 module is powered by an external 20 to 28 V DC power supply, ensuring stable operation also for all connected LPC-2 I/O modules.

💡 Diagnostic LED indicators

Equipped with four LED indicators to show RS-485 communication and power status (RS-485 Rx/Tx, communication status, power supply), enabling quick troubleshooting.

USE CASE EXAMPLES

Remote LPC-2 I/O connection

The LPC-2.MU0 module enables the connection of remote LPC-2 I/O module configurations to either the LPC-2 PLC (see Figure 1) or the LPC-3 touch panel (see Figure 2) via Modbus RTU over RS-485 network.

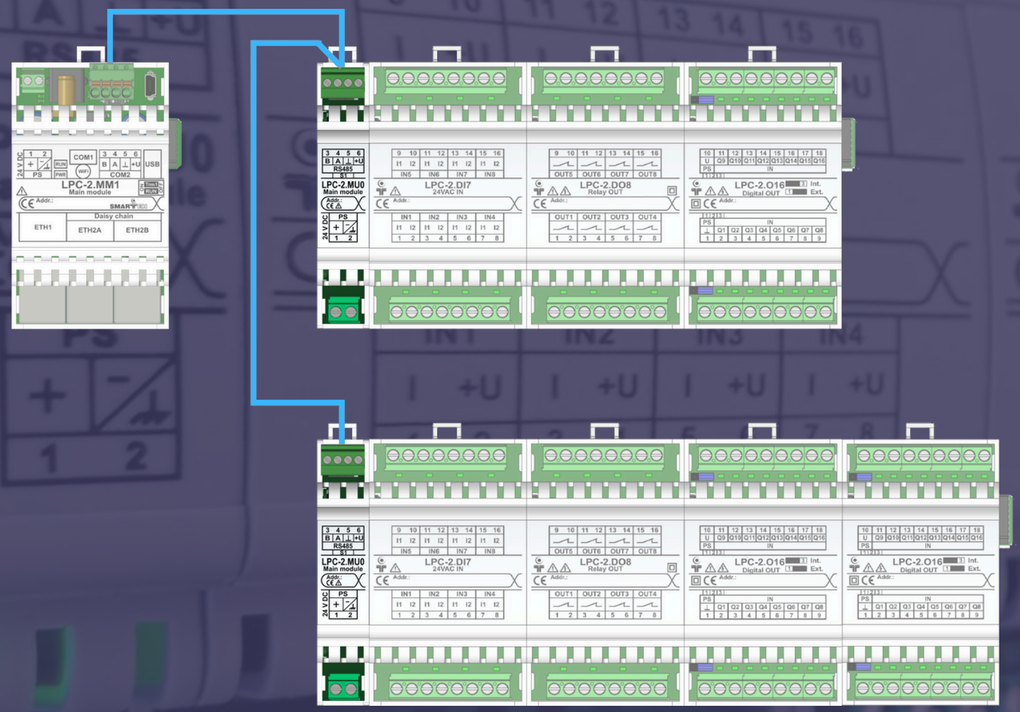


Figure 1: Example of remote connection of LPC-2 I/O configuration to LPC-2 PLC

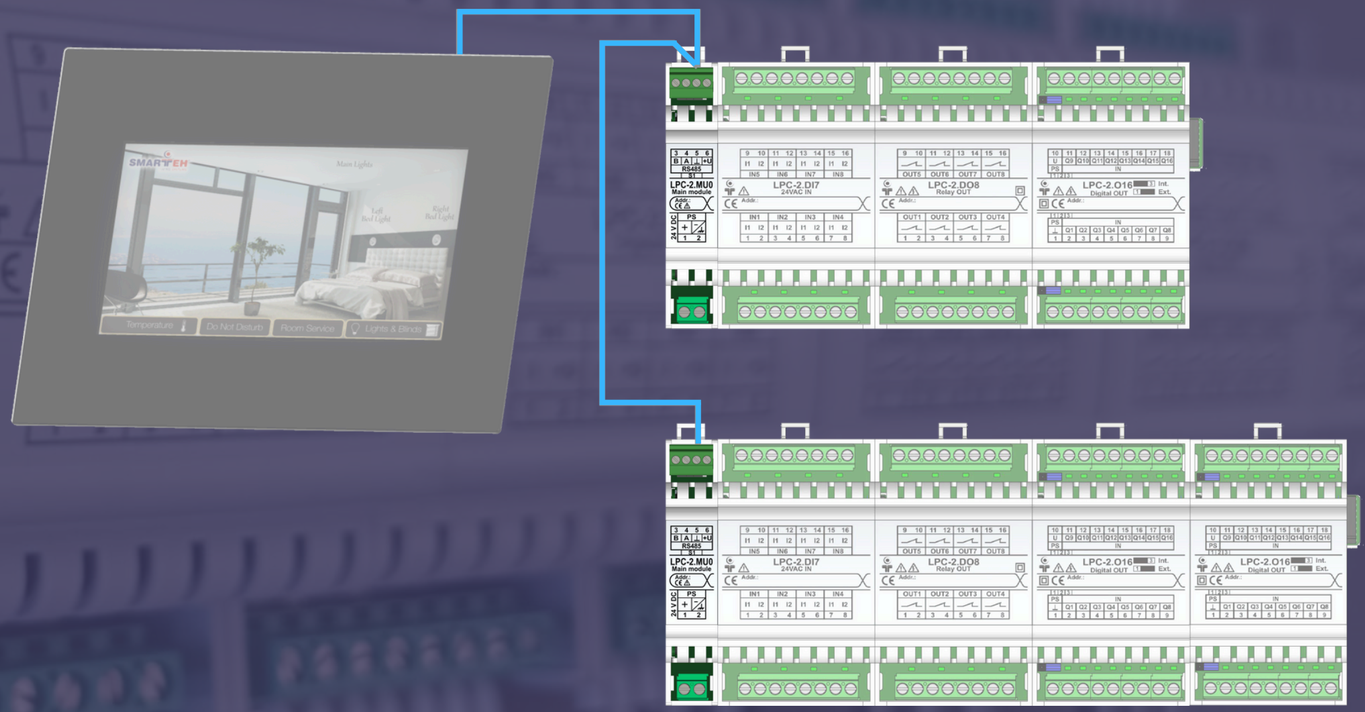


Figure 2: Example of remote connection of LPC I/O configuration to LPC-3 touch panel

USE CASE EXAMPLES

LPC-2 configuration I/O expansion

The LPC system supports seamless LPC-2 I/O expansion in situations where the enclosure lacks sufficient space for additional LPC-2 I/O modules (see Figure 3), or when more than 7 standard LPC-2 I/O modules are required in a single configuration (see Figure 4).
The LPC-2.MU0 Main module is connected externally and communicates with the Modbus RTU Master device via Modbus RTU over RS-485.
This robust industrial protocol ensures reliable data exchange even in demanding environments.

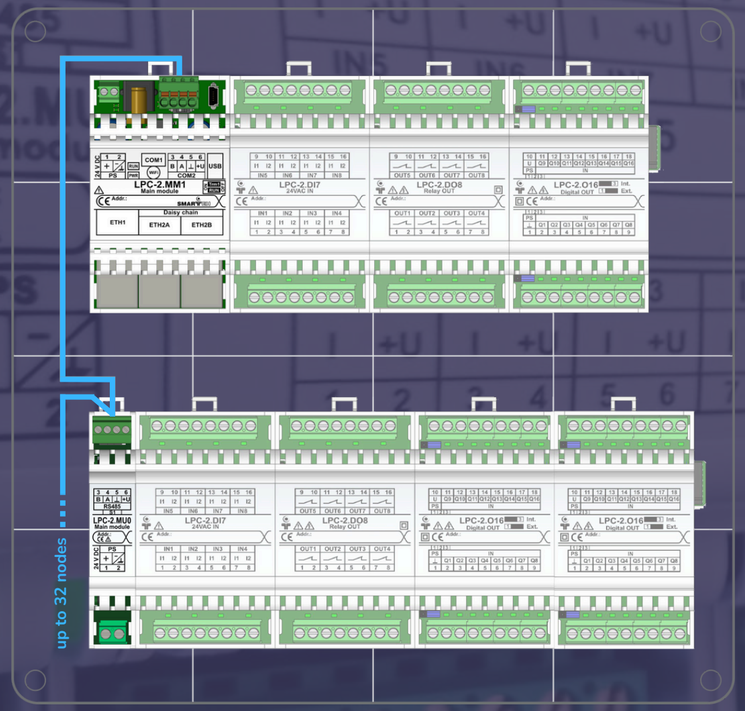


Figure 3: Example of expansion for small spaces

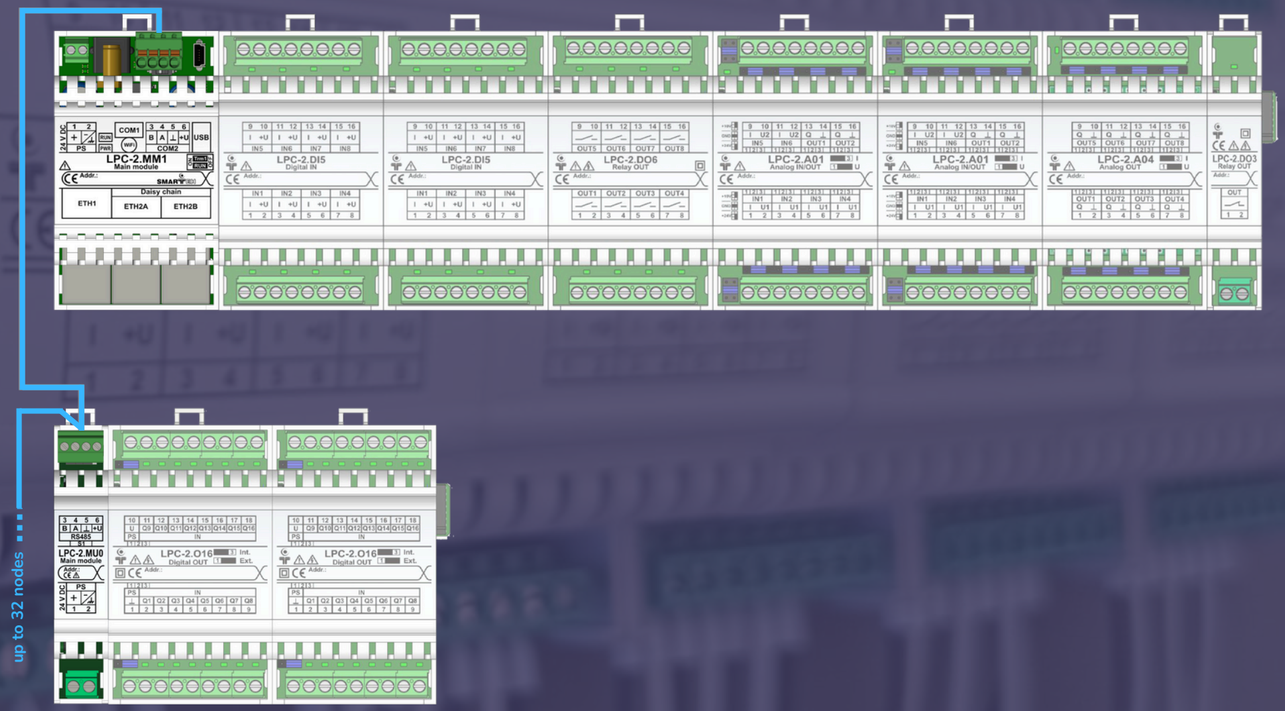


Figure 4: Example of expansion for > 7 LPC-2 I/O modules

LPC-2.MU0 REMOTE I/O MAIN MODULE CONFIGURATION TOOL

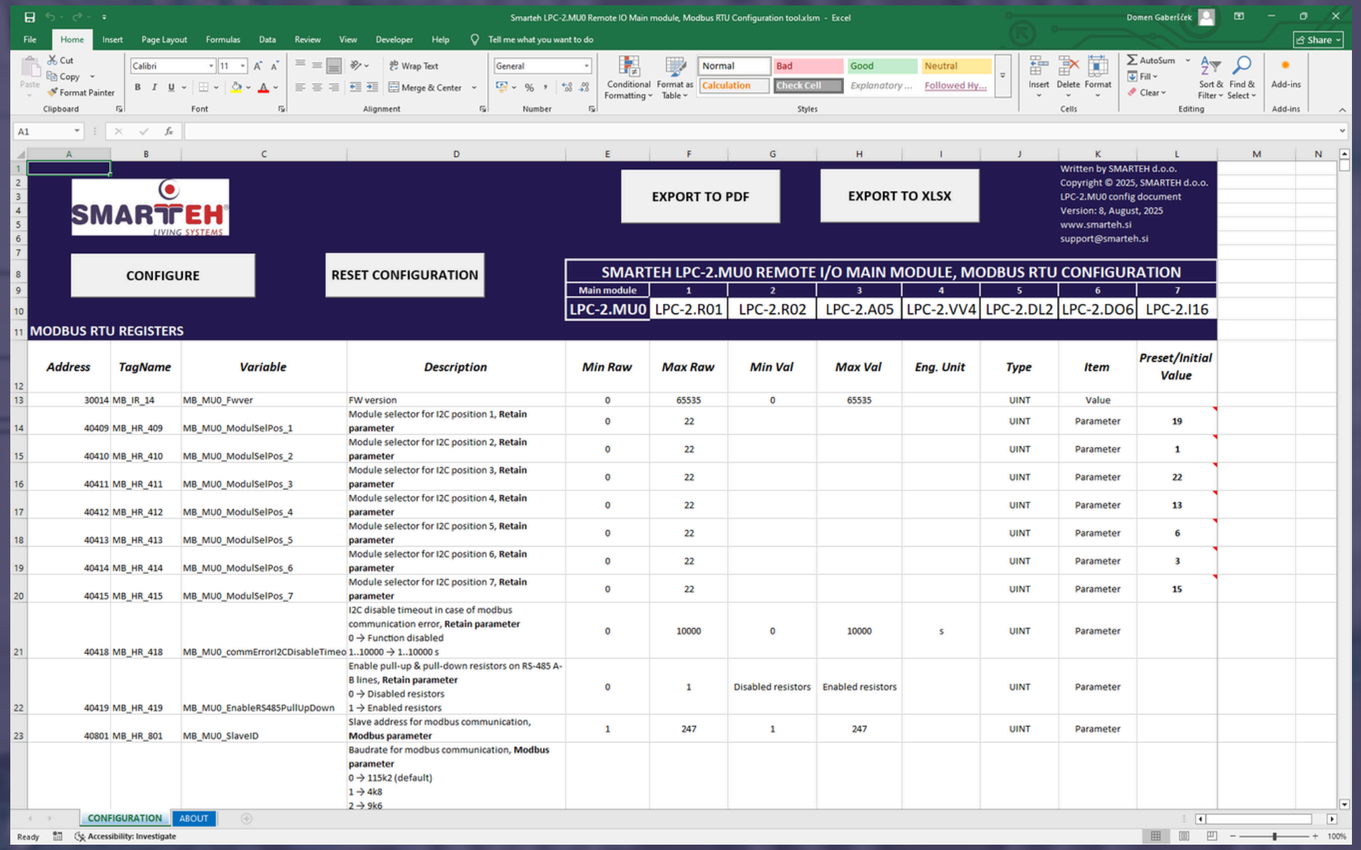
Smarteh LPC-2.MU0 Remote I/O Main module, Modbus RTU Configuration tool is designed to generate Modbus RTU registers for selected Smarteh LPC-2 I/O modules connected to the LPC-2.MU0 Remote I/O Main module, Modbus RTU:
LINK FOR DOWNLOAD

Step 1: Set the LPC-2.MU0 I/O module configuration

- *Select LPC-2 I/O modules from the drop-down list of available LPC-2 I/O modules in cells **F10:L10***

The LPC-2.MU0 module configuration can include up to Smarteh 7 LPC-2 I/O modules.
*If not all 7 LPC-2 I/O modules are used in the configuration, set unused slots to **"NOT USED"**.*

- *Once the configuration is set, click the **"CONFIGURE"** button to generate a list of all available Modbus RTU registers and their associated properties for the current configuration.*



Step 1: Set the LPC-2.MU0 I/O module configuration

LPC-2.MU0 REMOTE I/O MAIN MODULE CONFIGURATION TOOL

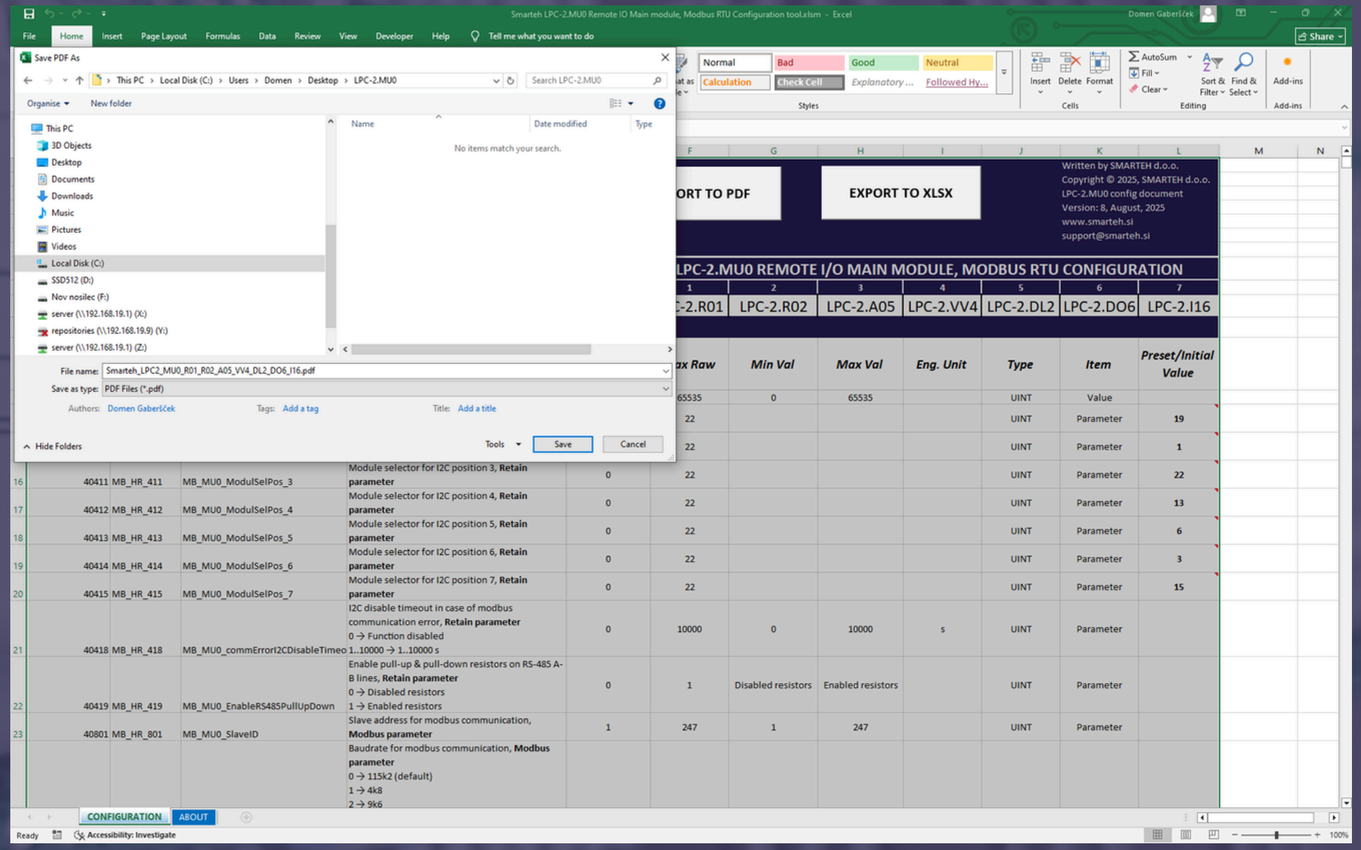
Step 2: Export the LPC-2.MU0 I/O module configuration to .PDF and/or .XLSx file

Once the LPC-2.MU0 I/O module configuration is set, click the **"CONFIGURE"** button to generate a list of all available Modbus RTU registers and their associated properties for the current configuration.

- *Use the **"EXPORT TO PDF"** and/or **"EXPORT TO XLSX"** buttons to export the configuration and its Modbus registers to a new file. The exported file will be ready for printing or further processing.*

***Note:** The configuration must be set before exporting to ensure that the correct Modbus RTU registers are included.*

- *Click the **"RESET CONFIGURATION"** button to clear all Modbus RTU registers and reset the configuration, i.e. before creating a new one.*

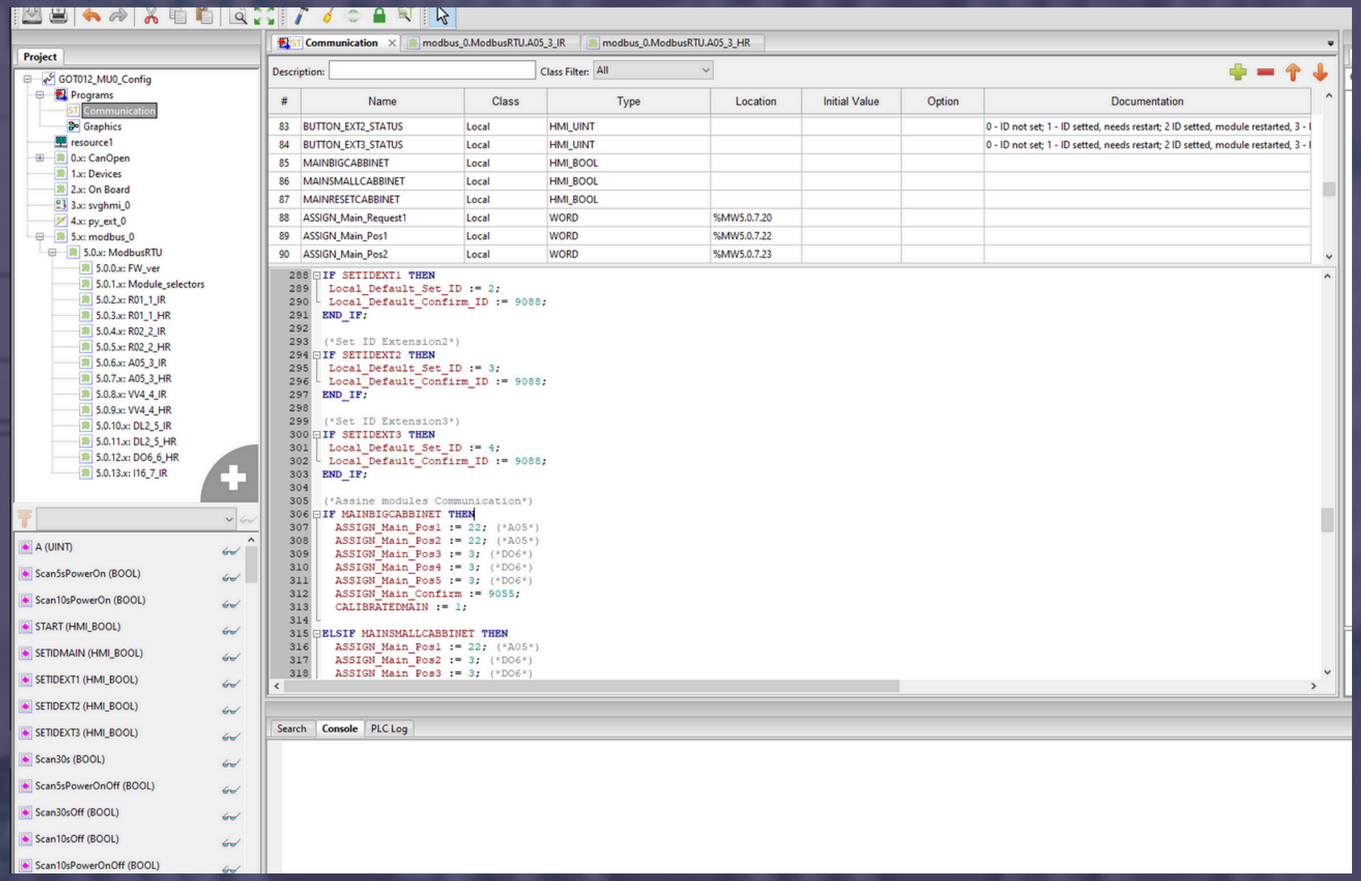


Step 2: Export the LPC-2.MU0 I/O module configuration to .PDF and/or .XLSx file

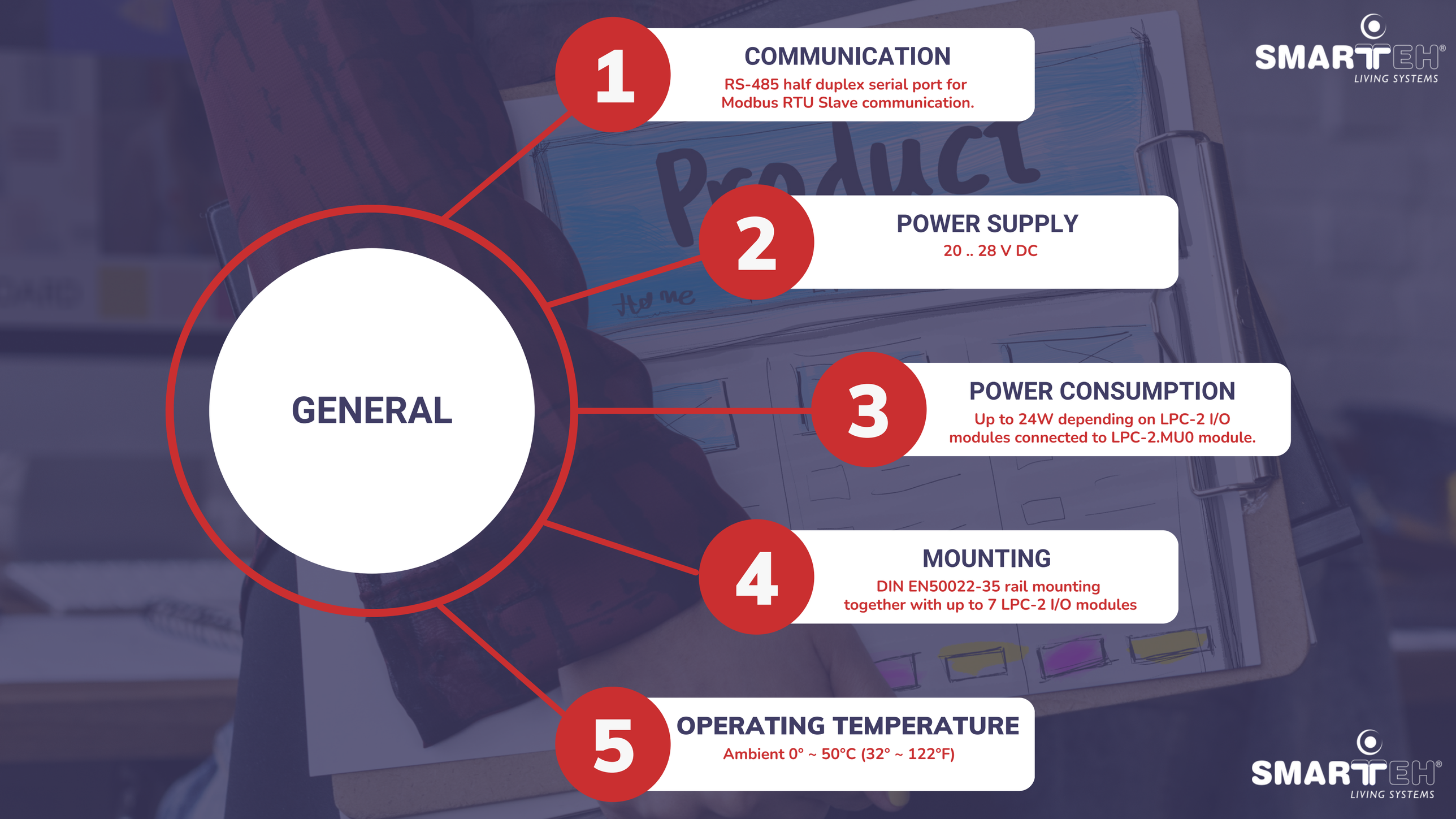
LPC-2.MU0 REMOTE I/O MAIN MODULE CONFIGURATION TOOL

Step 3: PLC programming

Incorporate the Modbus RTU registers generated for the LPC-2.MU0 module into your PLC logic using the Smarteh IDE or any other compatible Modbus RTU Master device control system.



Step 3: PLC programming



GENERAL

1 COMMUNICATION

RS-485 half duplex serial port for Modbus RTU Slave communication.

2 POWER SUPPLY

20 .. 28 V DC

3 POWER CONSUMPTION

Up to 24W depending on LPC-2 I/O modules connected to LPC-2.MU0 module.

4 MOUNTING

DIN EN50022-35 rail mounting together with up to 7 LPC-2 I/O modules

5 OPERATING TEMPERATURE

Ambient 0° ~ 50°C (32° ~ 122°F)

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LIVING SYSTEMS

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