# Table of Contents

**MPOD Features**

- Local Control ................................................................. 1
- MPOD Display Main menu ........................................... 1
- MPOD Display Channel menu ....................................... 2
  - Remote Control / Software ....................................... 3
    - Enable Slow Regulation ........................................... 5
    - MPOD controller interlock ........................................ 5
MPOD Features

MPOD is a mainframe for multi-channel high voltage (HV) and low voltage (LV) power supply modules.

Local Control

- **MPOD Knobs:** The two rotary knobs can be rotated and pushed. The right one controls vertical selections (e.g. to scroll down a menu task or increase/decrease a operating value), while the left one controls the horizontal selections (e.g. select other menus or sub-menus). By pushing the right knob (OK) it is possible to select a menu item or to confirm input by pushing the left knob (CANCEL) it is possible to escape from input fields.

MPOD Display Main menu

- **Main Window:** Rotate the right knob to change between GLOBAL, CHANNEL,CONFIG and LOCK.
- **Global Window:** Press the right knob to go into screen saver mode with high visibility channel display then Press the left knob to go back to the Main Window.
- **Channel Window:** Press the right knob to enter menu to access power supply channels. Press the left knob to go back to the GLOBAL Window. (HV channels: 000-007, LV Channels: 200-207 & 300-307)
MPOD Display Channel menu

- **Switch ON/OFF Status Window**: Press the right knob to switch channel ON or OFF. Rotate the right knob to change between SWITCH ON/OFF, NOMINAL, SUPERVISION and MODUL.

- **Nominal Settings Window**: Press the right knob to select parameter (will be marked). Rotate the right knob to change between Output Voltage, Current Limit or Voltage ramps. Press the right knob to edit value (will be shown in red), change value with the right and left knob, will change resolution digits (red) to allow precise settings. Press the right knob to save new values or the left knob to discard (cancel).

- **Supervision Setting Window**: Press the right knob to select parameter (will be marked yellow).
Rotate the right knob to change between parameters. Press the right knob to edit value (will be shown in red), change value with the right and left knob, will change resolution digits (red) to allow precise settings. Press the right knob to save new values or press the left knob to discard (escape). Rotate the left knob to go back (left) or to select another channel (right) which will mark right button yellow, channel then can be changed with the right knob.

• MODUL Window:

Remote Control / Software

Run the latest MUSEcontrol program. Starting the program, the main window gives a quick overview of the MPOD and its connected MPV low voltage modules. Please note that the MPOD crate has to be switched on in order to show the low voltage modules! It shows the 16 of LV channels starting from U16 to U31 (eg: U16->CH200, U17->CH201, U18->CH202....).
Low Voltage channels can be completely programmed and monitor within the MUSE application. You can switch ON or OFF any channel by clicking at the line of the channel. Click the **OutputConfiguration** to open the configuration dialog.

![Configuration Dialog](image)

The dialog is divided into five main sections:

1. **Measurement**: Shows the actual measured sense voltage, terminal voltage (at the module terminals), current, the calculated power and the most critical module temperature.

2. **Control & Status**: Here the channel can be **Switched ON** and **OFF**. If the channel has switched off because of any failure, the reason is displayed here, too.

3. **Nominal Values**: Here the nominal output voltage (sense voltage), current limit and ramping speeds are entered. The **No Ramp at Switch Off** check box forces immediate switch off. The regulation mode can be optimized for different cable lengths.

4. **Supervision**: Here the threshold values of the minimum sense voltage, the maximum sense voltage, the maximum terminal voltage, the maximum current, the maximum power, the maximum temperature and the communication timeout can be entered. The right column maximum can only be changed by this utility and is the maximum allowed value of the left column. The left column may be changed here or via the TCP/IP network. The most right column on failure defines the action if the associated threshold is exceeded. The communication timeout at the last row is an internal timeout of the communication between different processors. If the processor responsible for a specific
output has no data from it's master processor for longer than this time (in milliseconds), the output channel will be switched off.

5. **Identification:** The group number of the channel can be entered.

- Note that the LV channels will have trip if "Slow regulation" option is not enabled!

## Enable Slow Regulation

By default, Regulation mode must be enabled for each channel to prevent the trip on LV channels. Under the "Nominal Values" section in the "OutputConfiguration" dialog:

- check mark "**Moderate Regulation (cable lengths>1m)**"  
- check mark "**Slow Regulation (cable lengths >50m)**" (slow regulation requests both check boxes to be checked!).

## MPOD controller interlock

To prepare the MPOD controller select System -> Configuration which starts the network configuration dialog as shown below. DO NOT change any network configuration if you are not an expert.

- **Enable / Disable MPOD controller interlock:**
  - **Disable Interlock (Default):** check mark **Ignore Hardware interlock** should be set.
  - **Enable Interlock:** remove check mark **Ignore Hardware interlock**.

TTL input signal is ~4.5V. A high level allows the channels to be switched on by software. A low level forces all channels to switch off with their specified down ramp.

*The functionality of interlock on MPOD controller is successfully verified by removing the flag **IGNORE HARDWARE INTERLOCK** in the configuration tab, all the channels are functional. Current consumption is less than 10mA. if the TTL low applied (0V), terminal voltage is ramped down.

For the information in detail about MPOD features: MPOD User Manual

-- CandanDozen - 2020-03-09