

# Table of Contents

<b>Tenma 72-2540 low voltage power supply remote control.....</b>	<b>1</b>
Lab setup during Covid-19 teleworking (TL;DR).....	1
General description.....	1
Serial port settings.....	1
Serial port command format.....	1
List of serial port commands.....	2
ISET<X>:<NR2>.....	2
ISET<X>?.....	2
VSET<X>:<NR2>.....	2
VSET<X>?.....	2
IOUT<X>?.....	2
VOUT<X>?.....	2
BEEP<Boolean>.....	2
OUT<Boolean>.....	2
STATUS?.....	2
*IDN?.....	3
RCL<NR1>.....	3
SAV<NR1>.....	3
OCP<Boolean>.....	3
OVP<Boolean>.....	3

# Tenma 72-2540 low voltage power supply remote control

## Lab setup during Covid-19 teleworking (TL;DR)

The power supply powers the whole caribou setup. It is connected to PCLCD51 where it can be accessed through `/dev/ttyACM0`. Two shell scripts can be found in caribou home directory (`/home/caribou/`): `pwrSupplyOn.sh` and `pwrSupplyOff.sh`.

`pwrSupplyOn.sh` first switches the supply output off, then sets it to 12 V, 1.5 A and enables OCP (Over Current Protection). As a last step it switches the output on. You can use this script to power-on or power-cycle the board.

`pwrSupplyOff.sh` switches the supply output off. Use it to power the setup off.

Both scripts call python scripts located in `/home/caribou/tenma-serial/`.

## General description

The device can be controlled over a serial interface. One can connect either over an RS-232C or USB port. The USB port has a built-in USB-to-serial converter, that presents itself as an ACM device on the USB side. So it typically maps to `/dev/ttyACM0` on a linux machine. You can talk to it using any serial terminal software or also by redirecting the keyboard input to the corresponding device (e.g. `/dev/ttyACM0`). The serial port settings and list of commands is further down on this page.

The other way is to use scripts that translate a bit more user friendly interface to the serial commands. For example: <https://github.com/kxtells/tenma-serial>

## Serial port settings

- Baud rate: 9600
- Parity bit: None
- Data bit: 8
- Stop bit: 1
- Data flow control: None

## Serial port command format

- `COMMAND<X>:<NR2>`
- `COMMAND<X>?`
- `COMMAND<Boolean>`
- `COMMAND<NR1>`

- `<X>` Output channel (always 1 in case of a single channel supply 72-2540)
- `<NR1>` Digits with an implied decimal point assumed at the right of the least-significant digit.  
Example: 273 (Integer number)
- `<NR2>` Digits with an explicit decimal point. Examples: .273, 0.273
- `<Boolean>`: Boolean value 1 or 0.

## List of serial port commands

### **ISET<X> : <NR2>**

- Description: Sets the output current
- Response time: 50ms
- Example: `ISET1:2.225` sets the CH1 output current to 2.225A

### **ISET<X>?**

- Description: Returns the output current setting
- Example: `ISET1?` returns the CH1 output current setting.

### **VSET<X> : <NR2>**

- Description: Sets the output voltage.
- Example: `VSET1:20.50` sets the CH1 voltage to 20.50V.

### **VSET<X>?**

- Description: Returns the output voltage setting.
- Example: `VSET1?` returns the CH1 voltage setting.

### **IOUT<X>?**

- Description: Returns the actual output current.
- Example: `IOUT1?` returns the CH1 output current.

### **VOUT<X>?**

- Description: Returns the actual output voltage.
- Example: `VOUT1?` returns the CH1 output voltage.

### **BEEP<Boolean>**

- Description: Turns on or off the beep.
- <Boolean>: 0=OFF, 1=ON.
- Example: `BEEP1` turns on the beep.

### **OUT<Boolean>**

- Description: Turns on or off the output.
- <Boolean>: 0=OFF, 1=ON.
- Example: `OUT1` turns on the output.

### **STATUS?**

- Description: Returns the POWER SUPPLY status.
- Contents 8 bits in the following format:
  - ◆ bit 0: CH1 mode: 0=CC, 1=CV
  - ◆ bit 1: N/A

- ◆ bit 2: N/A
- ◆ bit 3: N/A
- ◆ bit 4: Beep: 0=Off, 1=On
- ◆ bit 5: Lock: 0=Lock, 1=Unlock
- ◆ bit 6: Output: 0=Off, 1=On
- ◆ bit 7: N/A

#### **\*IDN?**

- Description: Returns the device identification.
- Example: \*IDN? returns manufacturer, model name, serial number: TENMA 72-2540 SN:xxxxxxxx Vx.xx

#### **RCL<NR1>**

- Description: Recalls a panel setting.
- <NR1>: Memory number 1 to 5.
- Example: RCL1 recalls the panel setting stored in memory number 1.

#### **SAV<NR1>**

- Description: Stores the panel setting.
- <NR1>: Memory number 1 to 5.
- Example: SAV1 stores the panel setting in memory number 1.

#### **OCP<Boolean>**

- Description: Over current protection.
- <Boolean>: 0=OFF, 1=ON.
- Example: OCP1 turns on the OCP

#### **OVP<Boolean>**

- Description: Over voltage protection.
- <Boolean>: 0=OFF, 1=ON.
- Example: OVP1 turns on the OVP

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This topic: CLIC > TenmaPWRRemoteControlSyntax

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