

Power Supply SCPI command list

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SCPI Syntax

SCPI(Standard Commands for Programmable Instruments) is standard programmable commands to use in controlling measurement devices. The standard commands is based on ASCII command language.

Basic Syntax explanation :

- Command syntax** Each command in SCPI is defined in Upper case and lower case part. The upper case part is mandate and lower case part is optional.
e.g. "VOLTage?" is same as "VOLT?"
SCPI command is not case sensitive. It means "VOLTage?" is same as "VOLTAGE?" and "voltage?" during communication.
- Square bracket []** - The command in bracket is optional.
e.g. "[:SOURce]VOLTage?" can be replaced by "VOLTage"
The [:SOURce] is skipped.
- Angle bracket < >** - Indicate this is parameter for command. For example "VOLTage <value>", it means the VOLTage need to pass a value.
e.g. VOLTage 5V

e.g. Command "[:SOURce]VOLTage[:LEVel][:IMMediate][:AMPLitude]?" can be write as "volt?"

Remark: It need "\n" at the end of each command for power supply. e.g. "volt?\n"

General Command list

Set and read output Voltage

[[:SOURce]VOLTage[:LEVel][:IMMEDIATE][:AMPLitude] <value>

Description: Set output voltage , (Unit: V or mV)

Return Value: none

Example: "VOLT 1.00V"

means set output voltage to 1.00V

[[:SOURce]VOLTage[:LEVel][:IMMEDIATE][:AMPLitude]?

Description: Read output voltage setting

Return Value: set value of out voltage in Volt.

Example: "VOLT?"

return "1.00V"

means the output voltage is set to 1.00V

Set and read output Current limit

[[:SOURce]CURRent[:LEVel][:IMMEDIATE][:AMPLitude] <value>

Description: Set output current limit. (Unit: A or mA)

Return Value: none

Example: "CURR 1.00A"

means set output current limit to 1.00A

[[:SOURce]CURRent[:LEVel][:IMMEDIATE][:AMPLitude]?

Description: Read output current limit setting

Return Value: set value of out current limit in Amp.

Example: "CURR?"

return 1.00A"

means the output current limit is set to 1.00A

Read actual output voltage

MEASure[:SCALar]:VOLTage[:DC]?

Description: Read the actual output voltage.

Return Value: actual value of output voltage in Volt.

Example: "MEAS:VOLT?"

return "5.00V"

means the actual output voltage is 5.00V

Read actual output current

MEASure[:SCALar]:CURRent[:DC]?

Description: Read the actual output current.

Return Value: actual value of output current in Amp.

Example: "MEAS:CURR?"

return "1.00A"

means the actual output current is 1.00A

Read actual output power

MEASure[:SCALar]:POWer[:DC]?

Description: Read the actual output power

Return Value: actual value of output power in Watt

Example: "MEAS:POW?"

return "20.00W"

means the actual output power is 20.00W

Set and read Upper Voltage Limit(UVL)

[:SOURce]VOLTage:LIMit <value>

Description: Set Upper Voltage Limit value

Return Value: none

Example: "VOLT:LIM 5.00V"

means set UVL to 5.00V

[:SOURce]VOLTage:LIMit?

Description: Read Upper Voltage Limit setting

Return Value: set value of Upper Voltage Limit

Example: "VOLT:LIM?"

return "5.00V"

means set value of UVL is 5.00V

Set and read Upper Current Limit(UCL)

[:SOURce]:CURRent:LIMit <value>

Description: Set Upper Current Limit value

Return Value: none

Example: "CURR:LIM 1.00A"

means set UCL to 1.00A

[:SOURce]:CURRent:LIMit?

Description: Read Upper Current Limit setting

Return Value: set value of Upper Current Limit

Example: "CURR:LIM?"

return "1.00A"

means set value of UCL is 1.00A

Set and read output ON/OFF status

OUTPut[:STATe] <bool>

Description: Set output ON/OFF. <bool> = 0|1|ON|OFF

Return Value: none

Example: "OUTP 0" or "OUTP ON"

means set OUTPUT to ON

OUTPut[:STATe]?

Description: Read output ON/OFF status

Return Value: return 0|1

Example: "OUTP ?"

return "0"

means the output is ON

Set and read value of 10 preset programs

SYSTem:PRESet# <value1> , <value2>

Description: Set voltage and current of preset program #. # is between 0 to 9. Voltage value unit is V|mV and Current value unit is A|mA

Return Value: none

Example: "SYST:PRES3 5.00V, 1.00A"

means set preset program 3 to 5.00V and 1.00A

SYSTem:PRESet#?

Description: Read voltage and current of preset program#. # is between 0 to 9.

Return Value: return set value of voltage and current of preset program #

Example: "SYST:PRES4?"

return "10.00V, 2.00A"

means the set value of preset program 4 is 10.00V and 2.00A

Set power supply to local mode or remote mode

SYSTem:LOCAl

Description: Set power supply to local mode. Power supply indicate unlocked.

Return Value: none

Example: "SYST:LOC"

means set power supply to local access. The keypad and Jog are unlocked.

SYSTem:REMOte

Description: Set power supply to remote mode. Power supply indicate locked

Return Value: none

Example: "SYST:REM"

means set power supply to remote access. The keypad and Jog are locked.

Set and read date time

SYSTem:DATE <number1>,<number2>,<number3>

Description: Set date of power supply.

<number1> is year, range 1900 ~ 2099

<number2> is month, range 1~12

<number3> is day, range 1~31

Return Value: none

Example: "SYST:DATE 2015,10,14"

means set date to 2015-10-14

SYSTem:TIME <number1>,<number2>,<number3>

Description: Set date of power supply.

<number1> is hour, range 0~23

<number2> is minutes , range 0~59

<number3> is second, range 0~59

Return Value: none

Example: "SYST:TIME 22,30,10"

means set time to 22:30:10

SYSTem:DATE?

Description: Read date time from power supply

Return Value: "YYYY-MM-DD HH:MM:SS"

Example: "SYST:DATE?"

return "2015-10-14 21:25:10"

means the date in system is 14th October 2015 and time is 9:25:10 pm

Read SCPI version and Serial number

SYSTem:VERSion?

Description: read SCPI version

Return Value: "YYYY.V", YYYY is year, V is version.

Example: "SYST:VER?"

return "1999.0"

means year 1999, version 0

SYSTem:SN?

Description: Read Serial Number

Return Value: Serial number of power supply

Example: "SYST:SN?"

return "2015091813"

Set and read RS485 address

SYSTem:ADDRess <value>

Description: Set RS485 address for system. <value> range from 0-31

Return Value: none

Example: "SYST:ADDR 1"

means set RS485 address to 1.

SYSTem:ADDRess?

Description: Read RS485 address from system.

Return Value: return set value of RS485 address.

Example: "SYST:ADDR?"

return "1"

means the set value of RS485 address in system is 1.

Example of using RS485 with commands.

Example 1 : Set output on for the system with address number 2

Send "0x02OUP T ON"

Example 2 : Set output voltage to 25V for system with address number 10

Send "0x0AVOLT 25.00V"

Example 3 : Read output current from system with address number 26

Send "0x1AMEAS:CURR?"

Internal Program Operation commands

Introduction of Internal Programs

The power supply has 20 internal program which customer can be define. These program can be run in defined number of cycles.

*Remark: The PROGram:SECure should be set to OFF for internal program edit.

Set internal program protection stage

PROGram:SECure[:STATe] <bool>

Description: Set internal program protection stage. <bool> can be 0|1|ON|OFF. The internal program only can be edit when this stage set to 1|OFF.

Return Value: none

Example: "PROG:SEC OFF"

means set PROGram:SECure to OFF then enable edit.

Set program edit starting point

PROGram:LEVel <P#>

Description: Set program edit starting point. <P#> range from 1~20

Return Value: none

Example: "PROG:LEV 1"

means set edit starting point to program 1

Edit value for internal program

PROGram:DATA# <value1>,<value2>,<value3>

Description: Edit value for program #. If # is ignored, it use point defined in PROGram:LEVel. <value1> is Voltage value with unit V|mV. <value2> is Current value with unit A|mA. <value3> is run duration with unit S|MIN|HR.

Return Value: none

Example: "PROG:DATA2 5.00V, 2.00A, 35S"

means set program 2 to 5V, 2A and duration 35s

Save edited internal program value

PROG:SAVe

Description: Save edited internal program value

Return Value: none

Example: "PROG:SAV"

Read set value of internal program

PROG:DATA#?

Description: Read set value of internal program #. # is between 1~20

Return Value: return set value of Voltage, Current and Duration of program #

Example: "PROG:DATA1?"

return "5.00V, 1.00A, 15S"

means the program 1 has set 5.00V, 1.00A and duration 15S

Start to run of internal program

PROG:STARt <value1>,<value2>,<value3>

Description: Start running of internal program. <value1> is Start step, <value2> is End. Both have range 1~20. <value3> is number of cycle to be run. The range of <value3> is 1~999

Return Value: none

Example: "PROG:STAR 1, 5, 100"

means run from program 1 to program 5 for 100 cycles.

Stop the current running internal program

PROG:STOP

Description: Stop the current running internal program.

Return Value: none

Example: "PROG:STOP"