MPS300S series
SCPI protocol Programming manual

Case sensitivity

The SCPI command is case-insensitive, you can use uppercase, lowercase, or any combination of case.

For example:

*RST = *rst

*IDN? = *idn?

*RCL = *rcl

Full Form and Abbreviated Form

The SCPI command word can be sent in long form, short form, or a combination of long and short form, and the long form is provided in this paper. And the short form is indicated by upper case characters.

For example:

SYSTem:LOCal is long form

SYST:LOC is short form

SYSTem:LOC is Combination of long and short form

SYST:LOCal is Combination of long and short form

Note: Each command word must be either long or short, not intermediate.

For example: :SYSTe:LOCa is illegal and the command will not be executed.

Command format

Following the command syntax, most commands (and some parameters) are represented by a mixture of uppercase and lowercase letters. Capital letters indicate the abbreviation of the command. For shorter program lines, you can send commands in abbreviated form. For better program readability, you can send long form commands. For example, VOLT and VOLTAGE are acceptable formats. You can use uppercase or lowercase letters. Therefore, VOLTAGE, volt, and Volt are all acceptable formats. Other formats, such as VOL and VOLTAG, are invalid and will not be executed.

1.The curly braces ({ }) contain the parameter options for the given command string. Braces are not sent with the command string.

2.a vertical bar (|) separates multiple argument selections for a given command string. For example, in the above command, { 0 | 1 | OFF | ON } means that you can specify "0", "1", "OFF", "ON". Vertical bars are not sent with the command string.

3.Angle brackets (< >) indicate that a value must be specified for the parameter within the brackets. For example, VOLTage { < voltage value > }, the angle brackets are not sent with the command string. You must specify a value for the parameter. E.g. VOLT 1.23

4.The colon (:) is used to separate the command keyword from the next level keyword. For example: SYSTem: LOCal

5.Question mark (?) You can query the current value of a parameter by adding a question mark (?) To the command. For example: MEASure: VOLTage?

6.Space You must use a white space character, [TAB], or [space] to separate the parameter from the command keyword.

7.Terminator The command string sent to the instrument must end with a \ R \ n (0X0D, 0X0A) character. Command string termination always resets the current SCPI command path to the root level.

Remote interface connection

The power supply can be connected to the RS-232 interface through the DB9 plug on the rear panel through the level conversion circuit. The following content can help you understand how to control the output of the power

supply through the PC.

Communication settings

Before communication, you should first match the power supply with the following parameters of the PC.

Baud rate: 9600

Data bits: 8

Stop bit: 1

Check: None

IEEE 488.2 General Command

***IDN?**

This query command reads the power supply's identification string.

Return parameters: manufacturer name, product model, hardware version number, software version number.

***RST**

This command resets the power supply to the factory default state.

***SAV {<Address >}**

This command saves the current parameters to the specified address (1 ~ 9).

Example: * SAV 1

***RCL {<Address >}**

This command calls the parameters of the specified address (1 ~ 9)

Example: * RCL 1

SYSTem command

The SYSTem command is used to set and query the status of the system

SYSTem:LOCal

This command sets the power supply to the local operating mode.

SYSTem:REMote

This command sets the power supply to remote operation mode.

SYSTem: BEEP {0 | 1 | OFF | ON}

This command enables or disables the power tone.

Example: SYST: BEEP OFF "a power-off tone.

SYST: BEEP 1 "Enable power tone"

SYSTem :BEEP?

This command queries the tone status of the power supply.

Example: SYST: BEEP?

Return parameters: 0 (disable tone) | 1 (enable tone)

SYSTem :ERR?

This command queries the power supply for error information and clears the error flags.

Example: SYST: ERR?

Return parameter: error message

SYSTem :TEMP?

This command queries the internal temperature of the power supply.

Example: SYST: TEMP?

Return parameter: Temperature

APPLy command

The APPLy command is used to set and query the set voltage and current values simultaneously

APPL y {<voltage>,<current>}

This command sets the actual output voltage and current value of the power supply at the same times

Example: APPL12. 345,1. 234

Set voltage to 12.345 V, set current to 1.234 A

APPLy?

This command queries the set voltage and current values of the power supply at the same time.

Example: APPL?

Return parameters: set voltage value (XX. XXX), set current value (X. XXX)

MEASure command

The MEASure command queries the actual output voltage and current values of the power supply

MEASure: VOLTage?

This command queries the actual output voltage value of the power supply

Example: MEAS: VOLT?

Return parameter: actual voltage value (X. XXX)

MEASure: CURRent?

This command queries the actual output current value of the power supply

Example: MEAS: CURR?

Return parameter: actual current value (X. XXX)

MEASure: POWer?

This command queries the actual output power of the power supply

Example: MEAS: POW?

Return parameter: actual power value (XX. XXX)

MEASure: VCM?

This command queries the actual output voltage and current values of the power supply

Example: MEAS: VCM?

Return parameters: actual voltage, current value (XX. XXX, X. XXXX)

OUTPut command

The OUTPut command is used to set and query the output and output time of the power supply

OUTPut {<0 | 1 | OFF | ON>}

This command enables or disables the power supply output state

Example: OUTP OFF "Disable Power Output
OUTP 1 "Enable power output"

OUTPut?

This command queries the power supply output status

Example: OUTP?

VOLTage command

The VOLTage command is used to set and query the set voltage value and overvoltage protection value.

VOLTage {<voltage>}

This command is used to set the current output voltage of the power supply

Example: VOLT 12.345

Set voltage to 12.345 V

VOLTage?

This command is used to query the power setting voltage value.

Example: VOLT?

Returned parameter: voltage setting value (X. XXX)

VOLTage:MINimun {<voltage>}

This command sets the minimum value of the power supply output voltage

Example: CURR: MIN 3

Set the voltage to the minimum value of 3A

VOLTage:MINimun?

This command is used to query the minimum power supply output voltage

Example: VOLT: MIN?

Return parameter: minimum value of power supply voltage (XX. XXX)

VOLTage: MAXimun {<voltage>}

This command sets the maximum value of the power supply output voltage

Example: VOLT: MAX 32

Set the voltage to 32 V maximum

VOLTage: MAXimun?

This command is used to query the maximum power supply output voltage

Example: VOLT: MAX?

Return parameter: maximum value of power supply voltage (XX. XXX)

VOLTage: PROTection {<ovp>}

This command is used to set the power supply overvoltage protection values

Example: VOLT: PROT 12.3

Set the power supply overvoltage value to 12.3 V

VOLTage: PROTection?

This command is used to query the current overvoltage protection value of the power supply

Example: VOLT: PROT?
Return parameter: Power supply overvoltage protection value (X. XXX)

VOLTage: PROTection:STAT{<0|1|ON|OFF>}
This command is used to set the power supply overvoltage protection status
Example: VOLT: PROT: STAT OFF
Set the overvoltage protection status of the power supply to off

VOLTage: PROTection:STAT?
This command is used to query the power supply overvoltage protection status
Example: VOLT: PROT: STAT?
Return parameters: 0 (disable output) | 1 (enable output)

CURRent command

The CURRent command is used to set and query the set current value and overcurrent protection status.

CURRent {<current>}
This command is used to set the power supply output current values
Example: CURR 2.345
Set the output current value of the power supply to 2.345 A

CURRent?
This command is used to query the current value of the power supply settings
Example: CURR?
Returned parameter: power supply current setting value (X. XXXX)

CURRent:MINimun
This command sets the minimum power supply output current
Example: CURR: MIN 3
Set the current to the minimum value of 3A

CURRent:MINimun?
This command is used to query the minimum power supply output current
Example: CURR: MIN?
Returns: Minimum Supply Current (X. XXXX)

CURRent: MAXimun
This command sets the maximum power supply output current
Example: CURR: MAX 5
Set the current to a maximum of 5A

CURRent: MAXimun?
This command is used to query the maximum power supply output current
Example: CURR: MAX?
Return parameter: maximum value of power supply current (X. XXXX)

CURRent: PROTection {<ocp>}
This command is used to set the overcurrent protection value of the power supply

Example: CURR: PROT 3
Set the overcurrent value of the power supply to 3A

CURRent: PROTection?
This command is used to query the current overcurrent protection value of the power supply
Example: CURR: PROT?
Return parameter: power supply overcurrent protection value (X. XXXX)

CURRent: PROTection:STAT {<0|1|ON|OFF>}
This command is used to set the power supply overcurrent protection status
Example: CURR: PROT: STAT ON
Set the power supply overcurrent protection on

CURRent: PROTection:STAT?
This command is used to query the power supply overcurrent protection status
Example: CURR: PROT: STAT?
Return parameters: 0 (disable output) | 1 (enable output)