# OWH67000 Series Program Voltage SCPI Command Manual

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# 1、System Command

## SYSTem:VERSion?

**Syntax:**

SYSTem:VERSion?

**Description:**

Looks up the version of the SCPI command currently in use.

**Parameter:**

None.

**Example:**

**SYST:VERS?**

Return:V1.0.0

## SYSTem:LOCal

**Syntax:**

SYSTem:LOCal

**Description:**

Power off to remote control mode via communication interface (USB,RS485,LAN). At this point, the panel key resumes the operation.

**Parameter:**

None.

**Example:**

**SYST:LOC?**

Return:None.

## SYSTem:REMote

**Syntax:**

SYSTem:REMote

**Description:**

Set the power supply to remote control mode through the communication interface (USB,RS485,LAN). At this time, the panel key is locked and cannot be operated. All control commands need to be operated after this command.

**Parameter:**

None.

**Example:**

**SYST:REM?**

Return:None.

# 2、Output Command

## OUTPut

**Syntax:**

OUTPut[:STATe]{0|1|ON|OFF}
OUTPut[:STATe]?

**Description:**

Control the output status of the currently selected channel.

**Parameter:**

Open: 1 or ON;
Close: 0 or OFF.

**Example:**

(1) Turn on the output of the channel.

**OUTP ON**

(2) Query the channel output status,if the channel has output, it returns 1, otherwise it returns 0.

**OUTP?**

Return:1

(3) Set the output mode.

**CONFigure:OUTPut:MODE CCCV**

(4) Query the output mode.

**CONFigure:OUTPut:MODE?**

Return:CCCV

# 3、Control Command

## VOLTage

**Syntax:**

[SOURce:]VOLTage[:LEVel][:IMMediate][:AMPLitude]<value>
[SOURce:]VOLTage[:LEVel][:IMMediate][:AMPLitude]?

**Description:**

Set and query the output voltage value.

**Parameter:**

Value:The value of the output voltage to be set in floating point characters.

**Example:**

(1) Set the channel output voltage to 10V.

**VOLT 10**

(2) Query the channel output voltage.

**VOLT?**

Return:10.000

## VOLTage:LIMit

**Syntax:**

[SOURce:]VOLTage:LIMit[:LEVel][:IMMediate][:AMPLitude]<value>
[SOURce:]VOLTage:LIMit[:LEVel][:IMMediate][:AMPLitude]?

**Description:**

Set and query the maximum and minimum voltage output limit value.

**Parameter:**

value: |MIN|MAX|NRf|

**Example:**

(1) Set the output voltage limit to 10V.

**VOLT:LIM 10**

(2) Query the output voltage limit.

**VOLT:LIM?**

Return:10.000

## VOLTage: SLOPe

**Syntax:**

[SOURce:]VOLTage:SLOPe[:LEVel][:IMMediate][:AMPLitude]<value>
[SOURce:]VOLTage:SLOPe[:LEVel][:IMMediate][:AMPLitude]?

**Description:**

Set and query the power supply voltage output rise and fall slope.

**Parameter:**

value: |MIN|MAX|NRf|

**Example:**

(1) The output rise and fall slopes of the voltage are set to be 0.1V.

**VOLT:SLOP 0.1**

(2) Query the output rise and fall slopes of voltage.

**VOLT:SLOP?**

Return:0.1

## CURRent

**Syntax:**

[SOURce:]CURRent[:LEVel][:IMMediate][:AMPLitude]<value>
[SOURce:]CURRent[:LEVel][:IMMediate][:AMPLitude]?

**Description:**

Set and query the output current.

**Parameter:**

Value：|MIN|MAX|NRf|
Output current value to be set, number of floating point characters.

**Example:**

(1) Set the channel output current to 1A.

**CURR 1**

(2) Query the channel output current.

**CURR?**

Return:1.000

## CURRent:LIMit

**Syntax:**

[SOURce:]CURRent:LIMit[:LEVel][:IMMediate][:AMPLitude]<value>
[SOURce:]CURRent:LIMit[:LEVel][:IMMediate][:AMPLitude]?

**Description:**

Set and query maximum and minimum current output limit value.

**Parameter:**

value: |MIN|MAX|NRf|

**Example:**

(1) Set the output current limit to 1A.

**CURR:LIM 1**

(2) Query the output current limit.

**CURR:LIM?**

Return:1.000

## CURRent:SLOPe

**Syntax:**

[SOURce:]CURRent:SLOPe[:LEVel][:IMMediate][:AMPLitude]<value>
[SOURce:]CURRent:SLOPe[:LEVel][:IMMediate][:AMPLitude]?

**Description:**

Set and query the rising and falling slope.

**Parameter:**

value: |MIN|MAX|NRf|

**Example:**

(1) The output rise and fall slopes are set to be 0.1A.

**CURR:SLOP 0.1**

(2) Query the output rise and fall slopes.

**CURR:SLOP?**

Return:0.1

# 4、Measurement Command

## MEASure:VOLTage

**Syntax:**

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

**Description:**

Query the output voltage.

**Parameter:**

None.

**Example:**

(1) Query the output voltage.

**MEAS:VOLT?**

Return:10.000

## MEASure:CURRent

**Syntax:**

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

**Description:**

Query the output current.

**Parameter:**

None.

**Example:**

(1) Query the output current.

**MEAS:CURR?**

Return:1.000

## MEASure:POWer

**Syntax:**

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

**Description:**

Query the output power.

**Parameter:**

None.

**Example:**

(1) Query the output power.

**MEAS:POW?**

Return:100.0

## MEASure:ALL

**Syntax:**

MEASure[:SCALar]:ALL[:DC]?
MEASure[:SCALar]:ALL[:DC]:INFO?

**Description:**

Query the output voltage, output current, output power.

**Parameter:**

None.

**Example:**

(1) Query the output voltage and output current.

**MEAS:ALL?**

Return:10.000,2.000

(2) Query the output voltage, output current and output power.

**MEAS:ALL:INFO?**

Return:10.000,2.000,20.0

# 5、System Configure Command

## CONFigure:OUTPut:MODE

**Syntax:**

CONFigure:OUTPut:MODE{CCCV|LIST|PV|APG}
CONFigure:OUTPut:MODE?

**Description:**

Set and query the output mode.

**Parameter:**

Value CCCV|LIST|PV|APG

**Example:**

(1) Set the power supply to work in LIST mode.

**CONF:OUTP:MODE LIST**

(2) Query the power supply work status.

**CONF:OUTP:MODE?**

Return:LIST

## FUNCtion:PRIority

**Syntax:**

FUNCtion:PRIority{CV|CC|VOLTAGE|CURRENT}
FUNCtion:PRIority?

**Description:**

Set and query the output priority mode.

**Parameter:**

Value CV|CC|VOLTAGE|CURRENT

**Example:**

(1) Set the output of the power supply to CC priority.

**FUNC:PRI CC**

(2) Query the output priority mode.

**FUNC:PRI?**

Return: 0

# 6、Protection Command

# OVP,OCP,OPP

**Syntax:**

[SOURce:]VOLTage:PROTection[:LEVel]<value_f>
[SOURce:]VOLTage:PROTection[:LEVel]?
[SOURce:]CURRent:PROTection[:LEVel]<value_f>
[SOURce:]CURRent:PROTection[:LEVel]?
[SOURce:]POWer:PROTection[:LEVel]<value_f>
[SOURce:]POWer:PROTection[:LEVel]?

**Parameter:**

Value_f: |NRf|

**Description:**

VOLT:PROT ---> Set OVP protection value.
CURR:PROT ---> Set OCP protection value.
POW:PROT ---> Set OPP protection value.

**Example:**

1. VOLT:PROT 85.0
2. CURR:PROT 25.0
3. POW:PROT 1000.0

# 7、LIST Waveform Command

## LIST

**Syntax:**

[SOURce:]LIST:MODE {AUTO|MANUAL|EXTERN}
[SOURce:] LIST:MODE?

[SOURce:]LIST:STEP<value_i (1--100)>
[SOURce:]LIST:STEP?

[SOURce:]LIST:INDex<value_i (1--100)>
[SOURce:]LIST:INDex?

[SOURce:]LIST:VOLTage<value_f>
[SOURce:]LIST:VOLTage?

[SOURce:]LIST:CURRent<value _f>
[SOURce:]LIST:CURRent?

[SOURce:]LIST:TIMEr<value _f>
[SOURce:]LIST:TIMEr?

[SOURce:]LIST:CYCle<value_i (0--1000)>
[SOURce:]LIST:CYCle?

[SOURce:]LIST:LOAD
[SOURce:]LIST:TRIG

**Parameter:**

Value_f: |NRf|
Value_i: |NRI|

**Description:**

LIST:MODE,select LIST mode status.
LIST:STEP,set LIST execution steps.
LIST:INDex,set storage location index (1-100).
LIST:VOLT,set voltage of current index.
LIST:CURR,set current of current index.
LIST:TIME,set execution time of current index(the minimum execution time is 1MS=0.001)
LIST: CYCI,set the number of loops for the total LIST.
LIST:LOAD,load the LIST table to the DSP.
LIST:TRIG,triggers the DSP to run the LIST list output

**Example:**

1. CONF:OUTP:MODE LIST
2. LIST:MODE AUTO
3. LIST:STEP 10
4. LIST: CYCI 0
5. LIST:INDex 1
   1) LIST:VOLT 12.0
   2) LIST:CURR 1.0
   3) LIST:TIME 0.5

   Repeat the number of times you set step 5 to step 3, depending on the index.
6. LIST:LOAD
7. OUTP ON(Execute the LIST function)
8. LIST:TRIG(Use in MANUAL mode setting)

# 8、PV Simulation Command

# PV

**Syntax:**

SAS:CURve:TYPE{EN50530|SANDIA}
SAS:CURve:TYPE?

SAS:VOC<value_f>
SAS:VOC?

SAS:ISC<value_f>
SAS:ISC?

SAS:VMPp<value_f>
SAS:VMPp?

SAS:IMPp<value_f>
SAS:IMPp?

SAS:TMP<value_f>
SAS:TMP?

SAS:PMPp<value_f>
SAS:PMPp?

SAS:TECH{csi|tf}
SAS:TECH?

SAS:IRR<value_i (0--1000)>
SAS:IRR?

SAS:SANDIA:TECH{smc|hc|tf}
SAS:SANDIA:TECH?

SAS:SANDIA:IRRREF<value_i (0--1000)>
SAS:SANDIA:IRRREF?

SAS:SANDIA:TMPREF<value_f (0—100.0)>
SAS:SANDIA:TMPREF?

SAS:SANDIA:BETA<value_f (0.0—1.0)>
SAS:SANDIA:BETA?

SAS:SANDIA:FF<value_f (0.0—1.0)>
SAS:SANDIA:FF?

SAS:SANDIA:IRR<value_i (0--1000)>
SAS:SANDIA:IRR?

SAS:SANDIA:TMP<value_f (0—100.0)>
SAS:SANDIA:TMP?

SAS:SANDIA:PMPp<value_f>
SAS:SANDIA:PMPp?

SAS:SANDIA:VMPp<value_f>
SAS:SANDIA:VMPp?

TRIG
SAS:AVErage:VMPp?
SAS:AVErage:IMPp?
SAS:AVErage:PMPp?

**Parameter:**

Value_f: |NRf|
Value_i: |NRI|

**Description:**

SAS:CURve:TYPE,set the PV simulation type{EN50530|SANDIA}

The following is the EN50530 type simulation instruction description:

SAS:VOC ---> Set open circuit voltage.
SAS:ISC ---> Set maximum power.
SAS:VMPp ---> Set the voltage at maximum power.
SAS:IMPp ---> Set the current at maximum power.
SAS:TMP ---> Set environment temperature.
SAS:PMPp ---> Set the maximum power.
SAS:TECH ---> Set the material type.
SAS:IRR ---> Set the light intensity.

The following is the SANDIA type simulation instruction description:

SAS:SANDIA:TECH ---> Set material type.
SAS:SANDIA:IRRREF ---> Set the reference light intensity.
SAS:SANDIA:TMPREF ---> Set reference temperature.
SAS:SANDIA:BETA ---> Set Bell tower value.
SAS:SANDIA:FF ---> Filling coefficient.
SAS:SANDIA:IRR ---> Set the light intensity.
SAS:SANDIA:TMP ---> Set environment temperature.
SAS:SANDIA:PMPp ---> Set the maximum power.
SAS:SANDIA:VMPp ---> Set the voltage at maximum power.

TRIG ---> Trigger simulation run.
SAS:AVErage:VMPp? ---> Query the average voltage at maximum power when the simulation is running.
SAS:AVErage:IMPp? ---> Query the average current at maximum power when the simulation is running.
SAS:AVErage:PMPp? ---> Query the average power when the simulation is running.

**Example:**

1. CONF:OUTP:MODE PV
2. SAS:CURve:TYPE EN50530
3. SAS:VOC 25.0
4. SAS:ISC 5.0
5. SAS:VMPp 20.0
6. SAS:IMPp 3.0
7. SAS:TMP 25
8. SAS:PMPp 60.0
9. SAS:TECH csi
10. SAS:IRR 800
11. TRIG
12. OUTP ON (Execute start function)