



**OEL8000 Series  
Programming Manual**

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## 2. SCPI Introduction

This chapter mainly covers the following topics:

- Syntax — Understanding the main structure of commands
- Syntax Rules — Understanding the rules for writing commands
- Command Abbreviations — Understanding the specifications for command abbreviations

# Syntax

SCPI commands present a hierarchical tree structure and contain multiple sub-systems, each of which is made up of a root keyword and one or more sub-keywords. The command string usually starts with ":" , the keywords are separated by ":" and are followed by the parameter settings available, "?" is added at the end of the command string to indicate query and the command and parameter are separated by "space".

For example:

```
:TRIGger:SINGle:EDGE:SOURce <source>  
:TRIGger:SINGle:EDGE:SOURce?
```

**TRIGger** is the root keyword of the command. **SINGle**、**EDGE** and **SOURce** are the second level, third level and fourth level keywords. The command string starts with ":" which separates the multiple-level keywords. **<source>** represents parameters available for setting, "?" represents query and the command **:TRIGger:SINGle:EDGE:SOURce** and the parameter **<source>** are separated by "space".

## Syntax Rules

SCPI language itself defines a group of sub-system keywords, and at the same time allows users to add or reduce keywords. Those keywords can be some meaningful English words and are easy to remember, which are called mnemonics. Mnemonic has long and short types. The short are the abbreviation of the long. Keywords, data, and statements are separated by special characters.

### ➤ Rule to format mnemonics:

1. If the letter number of an English word is less than or equal to 4, then the word itself can be the mnemonic.(such as "Free" can be "FREE");
2. If the letter number of an English word exceeds 4, then the first four letters will be the mnemonic.(such as "Frequency" can be "FREQ");

3. If the forth letter is vowel, then mnemonic uses the former three letters.  
Vowels consists of a, e, i, o, and u.(such as "Power" can be "POW");
4. If it is not a word but a sentence, then use the first letters of the former words and the whole of the last word. (such as "Input Voltage" can be "IVOLtage")

➤ **Usage of symbols**

1. Space

The space is used to separate command and parameter.

2. Colon :

If the colon is in front of the first character, it means the following is Root Command. When the colon is set between two keywords, then it means moving from the current level to the next level.

3. asterisk\*

The commands start with asterisk are named Common Command, which is used to execute IEEE488.2 common commands.

4. Braces {}

The parameters enclosed in the braces are optional and are usually separated by the vertical bar "|". When using this command, one of the parameters must be selected.

5. Vertical Bar |

The vertical bar is used to separate multiple parameters and one of the parameters must be selected when using the command.

6. Triangle Brackets < >

The parameter enclosed in the triangle brackets must be replaced by an effective value.

7. Square Brackets [ ]

The content (command keyword) enclosed in the square brackets can be omitted.

➤ **Parameter Type**

1. **Discrete**

The parameter should be one of the values listed.

For example:

:TRIGger:SINGle:EDGE:SOURce <source>

:TRIGger:SINGle:EDGE:SOURce?

Of which:

<source> can be set to: CH1|CH2|EXT|EXT/5|ACLine

The query returns an abbreviated form: CH1、CH2、EXT、EXT/5 or ACLine.

## 2. Real

Parameters can be any real number in the range of valid values, This command accepts decimal numbers(NR2 format) and scientific notation (NR3 format) parameter input. For example:

:CH<n>:OFFSet <offset>

:CH<n>:OFFSet?

Of which:

<n> can be set to: 1 or 2 denote channel1 or channel2.

<offset> can be set to: between -2000 and 2000 .

The query returns the number between -2000 and 2000.

## 3. Bool

The parameter could be "OFF"、"0"、"ON"、"1". For example:

:CH1:DISPlay <bool>

:CH1:DISPlay?

Of which:

<bool> can be set to: {OFF|0}|{ON|1}

The query returns "OFF" or "ON".

## 4. ASCII String

The parameter could be ASCII characters combination. For example:

:TRIGger:SINGle:EDGE:LEVel <level>

:TRIGger:SINGle:EDGE:LEVel?

Of which:

<level> can be set to: 25mV.

# Command Abbreviation

Each SCPI command can be written mixed with uppercase and lowercase according to the syntax rules, and the capital letter part is just the abbreviation of the command. If abbreviation is used, all the capital letters in the command must be written completely. For parameters with units, please refer to the detail parameter specifications in the sub-system.

Example1:

:ACQuire:MODE SAMPlE

Abbreviation Below:

:ACQ:MODE SAMP

Example2:

:CH1:SCALe 1V

Abbreviation Below:

:CH1:SCAL 1V

## 3.IEEE488.2 Common Command

This chapter mainly introduces the following commands:

- [\\*IDN?](#)
- [\\*RST](#)

## **\*IDN?**

<b>Format</b>	*IDN?	
<b>Function Description</b>	The query returns the ID character string of the instrument.	
<b>Parameter</b>	None.	
<b>Instruction</b>	None.	
<b>Return format</b>	<p>&lt;Factory&gt;,&lt;model&gt;,&lt;serial number&gt;,XX.X.X.X.X</p> <p>&lt;model&gt;: type of instrument.</p> <p>&lt;serial number&gt;: serial number of instrument.</p> <p>XX.X.X.X.X: software version of instrument.</p>	
<b>Example</b>	<b>Sent</b>	*IDN?
	<b>Return</b>	Factory,model,2322011,V1.0.2.0.1

## **\*RST**

<b>Format</b>	*RST	
<b>Function Description</b>	Restore the instrument to its default value.	
<b>Parameter</b>	None.	
<b>Instruction</b>	None.	
<b>Return format</b>	None.	
<b>Example</b>	<b>Sent</b>	*RST
	<b>Return</b>	None

## 4. System Command

This chapter mainly introduces the following commands:

- [SYSTem:LOCal](#)
- [SYSTem:REMote](#)
- [SYSTem:SENSe\[:STATe\] <bool>](#)

## **SYSTem:LOCAL**

<b>Format</b>	SYSTem:LOCAL	
<b>Function Description</b>	Power off to remote control mode via communication interface (USB,RS485,LAN). At this point, the panel key resumes the operation.	
<b>Parameter</b>	None.	
<b>Instruction</b>	None.	
<b>Return format</b>	None.	
<b>Example</b>	<b>Sent</b>	SYST:LOC?
	<b>Return</b>	None

## **SYSTem:REMote**

<b>Format</b>	SYSTem:REMote	
<b>Function Description</b>	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.	
<b>Parameter</b>	None.	
<b>Instruction</b>	None.	
<b>Return format</b>	None.	
<b>Example</b>	<b>Sent</b>	SYST:REM?
	<b>Return</b>	None

## **SYSTem:SENSe[:STATe] <bool>**

<b>Format</b>	SYSTem:SENSe[:STATe] <bool> SYSTem:SENSe[:STATe]?
---------------	--

<b>Function</b>	Enable and disable the remote compensation function.	
<b>Description</b>		
<b>Parameter</b>	0 1 OFF ON	
<b>Instruction</b>	0 OFF: disable the remote compensation function; 1 ON: enable the remote compensation function.	
<b>Return format</b>	0 1	
<b>Example</b>	<b>Sent</b>	SYST:SENS ON //Set the remote compensation function to enable mode.
	<b>Query</b>	SYSTem:SENSe[:STATe]? //Query the remote compensation function status.
	<b>Return</b>	1

# 5. Source Command

This chapter mainly introduces the following commands:

- [\[SOURce:\]FUNCtion <function>](#)
- [Input Command](#)
  - ◆ [\[SOURce:\]INPut <bool>](#)
  - ◆ [\[SOURce:\]INPut:SHORt <bool>](#)
- [Voltage Command](#)
  - ◆ [\[SOURce:\]VOLTage:RANGe <NRf+>](#)
  - ◆ [\[SOURce:\]VOLTage:SLEW\[:BOTH\] <NRf+>](#)
  - ◆ [\[SOURce:\]VOLTage:SLEW:RISE <NRf+>](#)
  - ◆ [\[SOURce:\]VOLTage:SLEW:FALL <NRf+>](#)
  - ◆ [\[SOURce:\]VOLTage:PROTection\[:LEVel\] <NRf+>](#)
  - ◆ [\[SOURce:\]VOLTage\[:LEVel\]ON <NRf+>](#)
  - ◆ [\[SOURce:\]VOLTage\[:LEVel\]\[:IMMediate\]\[:AMPLitude\] <NRf+>](#)
- [Current Command](#)
  - ◆ [\[SOURce:\]CURRent:RANGe <NRf+>](#)
  - ◆ [\[SOURce:\]CURRent:SLEW\[:BOTH\] <NRf+>](#)
  - ◆ [\[SOURce:\]CURRent:SLEW:RISE <NRf+>](#)
  - ◆ [\[SOURce:\]CURRent:SLEW:FALL <NRf+>](#)
  - ◆ [\[SOURce:\]CURRent:PROTection\[:LEVel\] <NRf+>](#)
  - ◆ [\[SOURce:\]CURRent\[:LEVel\]\[:IMMediate\]\[:AMPLitude\] <NRf+>](#)
  - ◆ [\[SOURce:\]CURRent:LIMit\[:LEVel\]\[:IMMediate\]\[:AMPLitude\] <NRf+>](#)
- [Resistance Command](#)
  - ◆ [\[SOURce:\]RESistance\[:LEVel\]\[:IMMediate\]\[:AMPLitude\] <NRf+>](#)
  - ◆ [\[SOURce:\]RESistance:SLEW:RISE <NRf+>](#)
  - ◆ [\[SOURce:\]RESistance:SLEW:FALL <NRf+>](#)
- [Power Command](#)
  - ◆ [\[SOURce:\]POWER:PROTection\[:LEVel\] <NRf+>](#)

- ◆ [\[SOURce:\]POWer\[:LEVel\]\[:IMMEDIATE\]\[:AMPLitude\] <NRf+>](#)
- ◆ [\[SOURce:\]POWer:SLEW:RISE <NRf+>](#)
- ◆ [\[SOURce:\]POWer:SLEW:FALL <NRf+>](#)
- [Dynamic Command](#)
  - ◆ [\[SOURce:\]DYNAMIC:HIGH\[:LEVel\] <NRf+>](#)
  - ◆ [\[SOURce:\]DYNAMIC:HIGH:DEWL1 <NRf+>](#)
  - ◆ [\[SOURce:\]DYNAMIC:LOW\[:LEVel\] <NRf+>](#)
  - ◆ [\[SOURce:\]DYNAMIC:LOW:DEWL1 <NRf+>](#)
  - ◆ [\[SOURce:\]DYNAMIC:SLEW <NRf+>](#)
  - ◆ [\[SOURce:\]DYNAMIC:SLEW:RISE <NRf+>](#)
  - ◆ [\[SOURce:\]DYNAMIC:SLEW:FALL <NRf+>](#)
  - ◆ [\[SOURce:\]DYNAMIC:MODE <mode>](#)

## [SOURce:]FUNCTION <function>

<b>Format</b>	[SOURce:]FUNCTION <function> [SOURce:]MODE <function>	
<b>Function Description</b>	These two commands are equivalent and are used to select the input mode of the load.	
<b>Parameter</b>	CURRent   VOLTage   POWer   RESistance   DYNamic	
<b>Instruction</b>	CURRent: Constant current operation mode. VOLTage: Constant voltage operation mode. POWer: Constant power operation mode. RESistance: Constant resistance operation mode. DYNamic: Dynamic operation mode.	
<b>Return format</b>	CURRent   VOLTage   POWer   RESistance   DYNamic	
<b>Example</b>	<b>Sent</b>	MODE RES //Set the input mode of the load to Resistance.
	<b>Query</b>	[SOURce:]MODE? //Query the input mode of the load.
	<b>Return</b>	RESistance

## 5.1 Input Command

### [SOURce:]INPut <bool>

<b>Format</b>	[SOURce:]INPut <bool> [SOURce:]INPut?
<b>Function Description</b>	Set or query the input status.
<b>Parameter</b>	0 1 OFF ON
<b>Instruction</b>	0 OFF: disable the input;

	1 ON: enable the input.	
<b>Return format</b>	0 1	
<b>Example</b>	<b>Sent</b>	INP 1 //Set the input to enable mode.
	<b>Query</b>	INP? //Query the input status.
	<b>Return</b>	1

## [SOURce:]INPut:SHORt <bool>

<b>Format</b>	[SOURce:]INPut:SHORt <bool> [SOURce:]INPut:SHORt?	
<b>Function</b>	Set or query the short status.	
<b>Description</b>		
<b>Parameter</b>	0 1 OFF ON	
<b>Instruction</b>	0 OFF: disable the short; 1 ON: enable the short.	
<b>Return format</b>	0 1	
<b>Example</b>	<b>Sent</b>	INP:SHOR 1 //Set the short to enable mode.
	<b>Query</b>	INP:SHOR? //Query the short state.
	<b>Return</b>	1

## 5.2 Voltage Command

### [SOURce:]VOLTage:RANGe <NRf+>

<b>Format</b>	[SOURce:]VOLTage:RANGe <NRf+> [SOURce:]VOLTage:RANGe?
---------------	--

<b>Function</b>	Set or query the voltage range of the load module.	
<b>Description</b>		
<b>Parameter</b>	MIN ~MAX	
<b>Instruction</b>	When the set parameter falls within the small range, the small voltage range is selected; otherwise, the large voltage range is selected. The default unit is V.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	VOLT:RANGE MIN //Set the voltage range to minimum.
	<b>Query</b>	[SOURce:]VOLTage:RANGe? //Query the voltage range.
	<b>Return</b>	0.0

## [SOURce:]VOLTage:SLEW[:BOTH] <NRf+>

<b>Format</b>	[SOURce:]VOLTage:SLEW[:BOTH] <NRf+> [SOURce:]VOLTage:SLEW[:BOTH]?	
<b>Function</b>	Set or query the voltage rise and fall slope.	
<b>Description</b>		
<b>Parameter</b>	FAST/NORM/SLOW	
<b>Instruction</b>	None.	
<b>Return format</b>	FAST/NORM/SLOW	
<b>Example</b>	<b>Sent</b>	VOLT:SLEW FAST //Set the rise and fall slope to fast.
	<b>Query</b>	[SOURce:]VOLTage:SLEW[:BOTH]? //Query the rise and fall slope.
	<b>Return</b>	FAST

## [SOURce:]VOLTage:SLEW:RISE <NRf+>

<b>Format</b>	[SOURce:]VOLTage:SLEW:RISE <NRf+> [SOURce:]VOLTage:SLEW:RISE?	
<b>Function Description</b>	Set or query the voltage rise slope.	
<b>Parameter</b>	FAST/NORM/SLOW	
<b>Instruction</b>	None.	
<b>Return format</b>	FAST/NORM/SLOW	
<b>Example</b>	<b>Sent</b>	VOLT:SLEW RISE FAST //Set the rise slope to fast.
	<b>Query</b>	[SOURce:]VOLTage:SLEW:RISE? //Query the rise slope.
	<b>Return</b>	FAST

## [SOURce:]VOLTage:SLEW:FALL <NRf+>

<b>Format</b>	[SOURce:]VOLTage:SLEW:FALL <NRf+> [SOURce:]VOLTage:SLEW:FALL?	
<b>Function Description</b>	Set or query the voltage fall slope.	
<b>Parameter</b>	FAST/NORM/SLOW	
<b>Instruction</b>	None.	
<b>Return format</b>	FAST/NORM/SLOW	
<b>Example</b>	<b>Sent</b>	VOLT:SLEW FALL FAST //Set the fall slope to FAST.
	<b>Query</b>	[SOURce:]VOLTage:SLEW:FALL? //Query the fall slope.
	<b>Return</b>	FAST

## [SOURce:]VOLTage:PROTection[:LEVel] <NRf+>

<b>Format</b>	[SOURce:]VOLTage:PROTection[:LEVel] <NRf+> [SOURce:]VOLTage:PROTection[:LEVel]?	
<b>Function Description</b>	Set or query the voltage protection value. If the input voltage exceeds the set voltage protection value, the input will be turned off.	
<b>Parameter</b>	MIN ~ MAX   MINimum   MAXimum	
<b>Instruction</b>	The default unit is V.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	VOLT:PROT 3 //Set the voltage protection to 3 V.
	<b>Query</b>	[SOURce:]VOLTage:PROTection[:LEVel]? //Query the voltage protection value.
	<b>Return</b>	3.0

## [SOURce:]VOLTage:[LEVel:]ON <NRf+>

<b>Format</b>	[SOURce:]VOLTage:[LEVel:]ON <NRf+> [SOURce:]VOLTage:[LEVel:]ON?	
<b>Function Description</b>	Set or query the load's start carrying voltage value.	
<b>Parameter</b>	None.	
<b>Instruction</b>	The default unit is V.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	VOLT:ON 3 //Set the load's start carrying voltage value to 3 V.
	<b>Query</b>	[SOURce:]Voltage:[LEVel:]ON? //Query the load's start carrying voltage

		value.
	Return	3.0

**[SOURce:]VOLTage[:LEVel][:IMMediate][:AMPLitude]**

**<NRf+>**

<b>Format</b>	[SOURce:]VOLTage[:LEVel][:IMMediate][:AMPLitude] <NRf+> [SOURce:]VOLTage[:LEVel][:IMMediate][:AMPLitude]?	
<b>Function</b>	Set or query the set voltage in CV mode.	
<b>Description</b>		
<b>Parameter</b>	MIN~MAX	
<b>Instruction</b>	The default unit is V.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	VOLT 5 //Set the voltage in CV mode to 5V.
	<b>Query</b>	[SOURce:]VOLTage[:LEVel][:IMMediate][:AMPLitude]? //Query the voltage in CV mode.
	<b>Return</b>	5.0

### 5.3 Current Command

**[SOURce:]CURRent:RANGE <NRf+>**

<b>Format</b>	[SOURce:]CURRent:RANGE <NRf+> [SOURce:]CURRent:RANGE?
<b>Function</b>	Set or query the current range of the load module.
<b>Description</b>	
<b>Parameter</b>	MIN ~MAX

<b>Instruction</b>	When the set parameter falls within the small range, the small current range is selected; otherwise, the large current range is selected. The default unit is A.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	CURR:RANGE MIN //Set the current range to minimum.
	<b>Query</b>	[SOURce:]CURREnt:RANGe? //Query the current range.
	<b>Return</b>	0.0

## [SOURce:]CURREnt:SLEW[:BOTH] <NRf+>

<b>Format</b>	[SOURce:]CURREnt:SLEW[:BOTH] <NRf+> [SOURce:]CURREnt:SLEW[:BOTH]?	
<b>Function</b>	Set or query the current rise and fall slope.	
<b>Description</b>		
<b>Parameter</b>	Min ~ Max	
<b>Instruction</b>	The default unit is A/uS.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	CURR:SLEW 3 //Set the rise and fall slope to 3 A/μs.
	<b>Query</b>	[SOURce:]CURREnt:SLEW[:BOTH]? //Query the rise and fall slope.
	<b>Return</b>	3.0

## [SOURce:]CURREnt:SLEW:RISE <NRf+>

<b>Format</b>	[SOURce:]CURREnt:SLEW:RISE <NRf+> [SOURce:]CURREnt:SLEW:RISE?	
<b>Function</b>	Set or query the current rise slope.	

<b>Description</b>		
<b>Parameter</b>	MIN ~MAX	
<b>Instruction</b>	The default unit is A/uS.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	CURR:SLEW RISE 3 //Set the rise slope to 3 A/uS.
	<b>Query</b>	[SOURce:]CURR:RISE?
	<b>Return</b>	//Query the rise slope. 3.0

## [SOURce:]CURR:RISE <NRf+>

<b>Format</b>	[SOURce:]CURR:RISE <NRf+> [SOURce:]CURR:RISE?	
<b>Function</b>	Set or query the current rise slope.	
<b>Description</b>		
<b>Parameter</b>	FAST/NORM/SLOW	
<b>Instruction</b>	The default unit is A/uS.	
<b>Return format</b>	MIN ~ MAX	
<b>Example</b>	<b>Sent</b>	CURR:SLEW RISE 3 //Set the rise slope to 3 A/uS.
	<b>Query</b>	[SOURce:]CURR:RISE?
	<b>Return</b>	//Query the rise slope. 3.0

## [SOURce:]CURR:PROTECTION[:LEVEL] <NRf+>

<b>Format</b>	[SOURce:]CURR:PROTECTION[:LEVEL] <NRf+> [SOURce:]CURR:PROTECTION[:LEVEL]?
<b>Function</b>	Set or query the current protection value. If the input

<b>Description</b>	current exceeds the software current protection value within the time specified by CURR:PROT:DEL, the input will be turned off.	
<b>Parameter</b>	MIN ~ MAX   MINimum   MAXimum	
<b>Instruction</b>	The default unit is A. Use CURR:PROT:DEL to prevent current protection due to momentary overcurrent.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	CURR:PROT 3 //Set the current protection to 3 A.
	<b>Query</b>	[SOURce:]CURR:PROT? //Query the current protection value.
	<b>Return</b>	3.0

**[SOURce:]CURR:PROT[:LEVel][:IMMediate][:AMPLitude]**

**<NRf+>**

<b>Format</b>	[SOURce:]CURR:PROT[:LEVel][:IMMediate][:AMPLitude] <NRf+> [SOURce:]CURR:PROT?[:IMMediate][:AMPLitude]	
<b>Function</b>	Set or query the set current in CC mode.	
<b>Description</b>		
<b>Parameter</b>	MIN~MAX	
<b>Instruction</b>	The default unit is A.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	CURR 5 //Set the current in CC mode to 5A.
	<b>Query</b>	[SOURce:]CURR?[:IMMediate][:AMPLitude] //Query the current in CC mode.

	<b>Return</b>	5.0
--	---------------	-----

**[SOURce:]CURRent:LIMit[:LEVel][:IMMEDIATE][:AMPLitude] <NRf+>**

<b>Format</b>	[SOURce:]CURRent:LIMit[:LEVel][:IMMEDIATE][:AMPLitude] <NRf+> [SOURce:]CURRent:LIMit[:LEVel][:IMMEDIATE][:AMPLitude]?	
<b>Function</b>	Set or query the set current limit value.	
<b>Description</b>		
<b>Parameter</b>	MIN~MAX	
<b>Instruction</b>	The default unit is A.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	CURR:LIM 5 //Set the current limit value to 5A.
	<b>Query</b>	[SOURce:]CURRent:LIMit[:LEVel][:IMMEDIATE][:AMPLitude]? //Query the current limit value.
	<b>Return</b>	5.0

## 5.4 Resistance Command

**[SOURce:]RESistance[:LEVel][:IMMEDIATE][:AMPLitude] <NRf+>**

<b>Format</b>	[SOURce:]RESistance[:LEVel][:IMMEDIATE][:AMPLitude] <NRf+> [SOURce:]RESistance[:LEVel][:IMMEDIATE][:AMPLitude]?
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<b>Function</b>	Set or query the set resistance in CR mode.	
<b>Description</b>		
<b>Parameter</b>	MIN~MAX	
<b>Instruction</b>	The default unit is ohm.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	RES 10 //Set the resistance in CR mode to 10ohm.
	<b>Query</b>	[SOURce:]RESistance[:LEVel][:IMMEDIATE] [:AMPLitude]? //Query the resistance in CR mode.
	<b>Return</b>	10.0

## [SOURce:]RESistance:SLEW:RISE <NRf+>

<b>Format</b>	[SOURce:]RESistance:SLEW:RISE <NRf+> [SOURce:]RESistance:SLEW:RISE?	
<b>Function</b>	Set or query the current rise slope in resistance mode.	
<b>Description</b>		
<b>Parameter</b>	FAST/NORM/SLOW	
<b>Instruction</b>	None.	
<b>Return format</b>	FAST/NORM/SLOW	
<b>Example</b>	<b>Sent</b>	RES:SLEW:RISE FAST //Set the current rise slope to fast.
	<b>Query</b>	[SOURce:]RESistance:SLEW:RISE? //Query the current rise slope.
	<b>Return</b>	FAST

## [SOURce:]RESistance:SLEW:FALL <NRf+>

<b>Format</b>	[SOURce:]RESistance:SLEW:FALL <NRf+>
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	[SOURce:]RESistance:SLEW:FALL?	
<b>Function</b>	Set or query the current fall slope in resistance mode.	
<b>Description</b>		
<b>Parameter</b>	FAST/NORM/SLOW	
<b>Instruction</b>	None.	
<b>Return format</b>	FAST/NORM/SLOW	
<b>Example</b>	<b>Sent</b>	RES:SLEW:FALL SLOW //Set the current fall slope to slow.
	<b>Query</b>	[SOURce:]RESistance:SLEW:FALL? //Query the current fall slope.
	<b>Return</b>	SLOW

## 5.5 Power Command

**[SOURce:]POWER:PROTection[:LEVel] <NRf+>**

<b>Format</b>	[SOURce:]POWER:PROTection[:LEVel] <NRf+> [SOURce:]POWER:PROTection[:LEVel]?	
<b>Function</b>		
<b>Description</b>	Set or query the power protection value. If the power exceeds the power protection value within the time specified by POW:PROT:DEL, the input will be turned off.	
<b>Parameter</b>	MIN ~ MAX   MINimum   MAXimum	
<b>Instruction</b>	The default unit is W. Use the POW:PROT:DEL command to prevent momentary power protection, which is caused by changes in the edit that stop the over-power protection.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	POW:PROT 100 //Set the power protection to 100 W.

	<b>Query</b>	[SOURce:]POWer:PROTection[:LEVel]? //Query the power protection value.
	<b>Return</b>	100.0

## [SOURce:]POWer[:LEVel][:IMMEDIATE][:AMPLitude]

<NRf+>

<b>Format</b>	[SOURce:]POWer[:LEVel][:IMMEDIATE][:AMPLitude] <NRf+> [SOURce:]POWer[:LEVel][:IMMEDIATE][:AMPLitude]?	
<b>Function Description</b>	Set or query the set power in CP mode.	
<b>Parameter</b>	MIN~MAX	
<b>Instruction</b>	The default unit is W.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	POW 10 //Set the power in CP mode to 10W.
	<b>Query</b>	[SOURce:]POWer[:LEVel][:IMMEDIATE][:AMPLitude]? //Query the power in CP mode.
	<b>Return</b>	10.0

## [SOURce:]POWer:SLEW:RISE <NRf+>

<b>Format</b>	[SOURce:]POWer:SLEW:RISE <NRf+> [SOURce:]POWer:SLEW:RISE?
<b>Function Description</b>	Set or query the current rise slope in power mode.
<b>Parameter</b>	FAST/NORM/SLOW
<b>Instruction</b>	None.

<b>Return format</b>	FAST/NORM/SLOW	
<b>Example</b>	<b>Sent</b>	POW:SLEW:RISE NORM //Set the current rise slope to normal.
	<b>Query</b>	[SOURce:]POWER:SLEW:RISE? //Query the current rise slope.
	<b>Return</b>	NORM

## [SOURce:]POWER:SLEW:FALL <NRf+>

<b>Format</b>	[SOURce:]POWER:SLEW:FALL <NRf+> [SOURce:]POWER:SLEW:FALL?	
<b>Function Description</b>	Set or query the current fall slope in power mode.	
<b>Parameter</b>	FAST/NORM/SLOW	
<b>Instruction</b>	None.	
<b>Return format</b>	FAST/NORM/SLOW	
<b>Example</b>	<b>Sent</b>	POW:SLEW:FALL FAST //Set the current fall slope to fast.
	<b>Query</b>	[SOURce:]POWER:SLEW:FALL? //Query the current fall slope.
	<b>Return</b>	FAST

## **5.6 Dynamic Command**

## [SOURce:]DYNamic:HIGH[:LEVel] <NRf+>

<b>Format</b>	[SOURce:]DYNamic:HIGH[:LEVel] <NRf+> [SOURce:]DYNamic:HIGH[:LEVel]?	
<b>Function Description</b>	Set or query the high-precision load current in dynamic mode.	
<b>Parameter</b>	MIN~MAX	
<b>Instruction</b>	The default unit is A.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	DYN:HIGH 10 //Set the high-precision load current to 10A.
	<b>Query</b>	[SOURce:]DYNamic:HIGH[:LEVel]? //Query the high-precision load current.
	<b>Return</b>	10.0

## [SOURce:]DYNamic:HIGH:DWEli <NRf+>

<b>Format</b>	[SOURce:]DYNamic:HIGH:DWEli <NRf+> [SOURce:]DYNamic:HIGH:DWEli?	
<b>Function Description</b>	Set or query the high-precision load current duration in dynamic mode.	
<b>Parameter</b>	MIN~MAX	
<b>Instruction</b>	The default unit is S.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	DYN:HIGH:DWEli 0.01 //Set the high-precision load current duration to 0.01S.
	<b>Query</b>	[SOURce:]DYNamic:HIGH:DWEli? //Query the high-precision load current duration.

	<b>Return</b>	0.01
--	---------------	------

## [SOURce:]DYNAMIC:LOW[:LEVel] <NRf+>

<b>Format</b>	[SOURce:]DYNAMIC:LOW[:LEVel] <NRf+> [SOURce:]DYNAMIC:LOW[:LEVel]?	
<b>Function Description</b>	Set or query the low-precision load current in dynamic mode.	
<b>Parameter</b>	MIN~MAX	
<b>Instruction</b>	The default unit is A.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	DYN:LOW 1 //Set the low-precision load current to 1A.
	<b>Query</b>	[SOURce:]DYNAMIC:LOW[:LEVel]? //Query the low-precision load current.
	<b>Return</b>	1.0

## [SOURce:]DYNAMIC:LOW:DWELI <NRf+>

<b>Format</b>	[SOURce:]DYNAMIC:LOW:DWELI <NRf+> [SOURce:]DYNAMIC:LOW:DWELI?	
<b>Function Description</b>	Set or query the low-precision load current duration in dynamic mode.	
<b>Parameter</b>	MIN~MAX	
<b>Instruction</b>	The default unit is S.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	DYN:LOW:DWELI 1 //Set the low-precision load current duration to 1S.
	<b>Query</b>	[SOURce:]DYNAMIC:LOW:DWELI?

		//Query the low-precision load current duration.
	Return	1.0

## [SOURce:]DYNamic:SLEW <NRf+>

<b>Format</b>	[SOURce:]DYNamic:SLEW <NRf+> [SOURce:]DYNamic:SLEW?	
<b>Function Description</b>	Set or query the current slope in dynamic mode.	
<b>Parameter</b>	MIN~MAX	
<b>Instruction</b>	The default unit is A/uS.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	DYN:SLEW 3 //Set the current slope to 3 A/uS.
	<b>Query</b>	[SOURce:]DYNamic:SLEW? //Query the current slope.
	<b>Return</b>	3.0

## [SOURce:]DYNamic:SLEW:RISE <NRf+>

<b>Format</b>	[SOURce:]DYNamic:SLEW:RISE <NRf+> [SOURce:]DYNamic:SLEW:RISE?	
<b>Function Description</b>	Set or query the current rise slope in dynamic mode.	
<b>Parameter</b>	MIN~MAX	
<b>Instruction</b>	The default unit is A/uS.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	DYN:SLEW:RISE 3 //Set the current rise slope to 3 A/uS.

	<b>Query</b>	[SOURce:]DYNamic:SLEW:RISE? //Query the current rise slope.
	<b>Return</b>	3.0

## [SOURce:]DYNamic:SLEW:FALL <NRf+>

<b>Format</b>	[SOURce:]DYNamic:SLEW:FALL <NRf+> [SOURce:]DYNamic:SLEW:FALL?	
<b>Function Description</b>	Set or query the current fall slope in dynamic mode.	
<b>Parameter</b>	MIN~MAX	
<b>Instruction</b>	The default unit is A/uS.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	DYN:SLEW:FALL 3 //Set the current fall slope to 3 A/uS.
	<b>Query</b>	[SOURce:]DYNamic:SLEW:FALL? //Query the current fall slope.
	<b>Return</b>	3.0

## [SOURce:]DYNamic:MODE <mode>

<b>Format</b>	[SOURce:]DYNamic:MODE <mode> [SOURce:]DYNamic:MODE?	
<b>Function Description</b>	Set or query the mode in dynamic mode.	
<b>Parameter</b>	CONTinuous PULSe	
<b>Instruction</b>	None.	
<b>Return format</b>	CONTinuous PULSe	
<b>Example</b>	<b>Sent</b>	DYN:MODE PULS //Set the mode to pulse.

	<b>Query</b>	[SOURce:]DYNamic:MODE? //Query the mode.
	<b>Return</b>	PULS

## 6. Measurement Command

This chapter mainly introduces the following commands:

- [MEASure\[:SCALar\]:VOLTage\[:DC\]?](#)
- [MEASure\[:SCALar\]:CURRent\[:DC\]?](#)
- [MEASure\[:SCALar\]:POWer\[:DC\]?](#)
- [MEASure\[:SCALar\]:ALL\[:DC\]:INFO?](#)

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

<b>Format</b>	MEASure[:SCALar]:VOLTage[:DC]?	
<b>Function</b>	Query the average voltage value.	
<b>Description</b>		
<b>Parameter</b>	None.	
<b>Instruction</b>	None.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	MEAS:VOLT? //Query the average voltage value.
	<b>Return</b>	3.0

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

<b>Format</b>	MEASure[:SCALar]:CURRent[:DC]?	
<b>Function</b>	Query the average current value.	
<b>Description</b>		
<b>Parameter</b>	None.	
<b>Instruction</b>	None.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	MEAS:CURR? //Query the average current value.
	<b>Return</b>	3.0

## **MEASure[:SCALar]:POWeR[:DC]?**

<b>Format</b>	MEASure[:SCALar]:POWeR[:DC]?	
<b>Function</b>	Query the average power value.	
<b>Description</b>		
<b>Parameter</b>	None.	

<b>Instruction</b>	None.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	MEAS:POWer? //Query the average current value.
	<b>Return</b>	3.0

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

<b>Format</b>	MEASure[:SCALar]:ALL[:DC]:INFO?	
<b>Function</b>	Query the fault status of OVP, OCP, and OPP.	
<b>Description</b>		
<b>Parameter</b>	None.	
<b>Instruction</b>	None.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	MEAS:ALL:INFO? //Query the fault status.
	<b>Return</b>	9.496,20.000,189.918,OFF,OFF,OFF

## 7. Parallel Command

This chapter mainly introduces the following commands:

- [:PARallel\[:STATe\]?](#)
- [:PARallel:Identity?](#)
- [:PARallel:NUMber?](#)

## **:PARallel[:STATe]?**

<b>Format</b>	:PARallel[:STATe]?	
<b>Function</b>	Query the parallel operation enable status.	
<b>Description</b>		
<b>Parameter</b>	None.	
<b>Instruction</b>	None.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	:PARallel[:STATe]? //Query the parallel operation enable status.
	<b>Return</b>	<NR2>

## **:PARallel:Identity?**

<b>Format</b>	:PARallel:Identity?	
<b>Function</b>	Query whether it is a slave or master in parallel mode.	
<b>Description</b>		
<b>Parameter</b>	None.	
<b>Instruction</b>	None.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	:PARallel:Identity? //Query the parallel mode.
	<b>Return</b>	Master

## **:PARallel:NUMber?**

<b>Format</b>	:PARallel:NUMber?	
<b>Function</b>	Query the number of units in parallel mode.	
<b>Description</b>		

<b>Parameter</b>	None.	
<b>Instruction</b>	None.	
<b>Return format</b>	<NR2>	
<b>Example</b>	<b>Sent</b>	:PARallel:NUMber? //Query the number of units.
	<b>Return</b>	2