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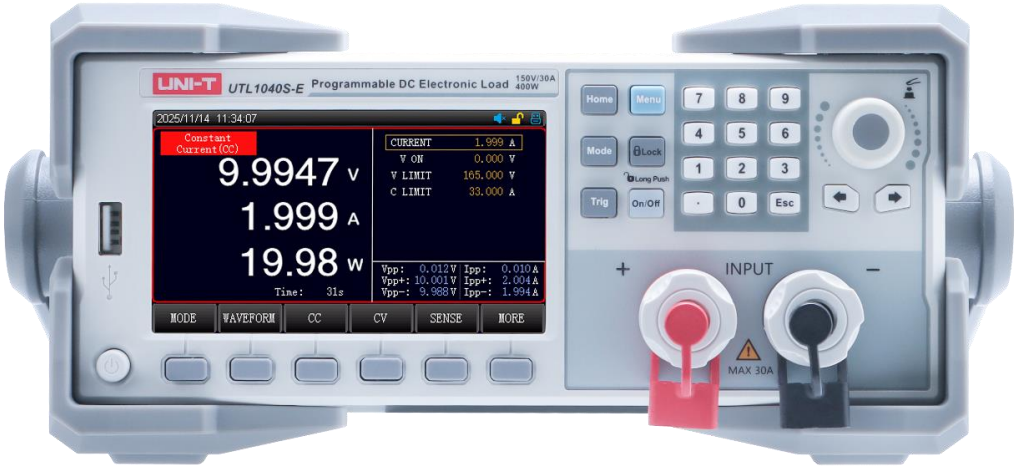


Programming Manual

UTL1000S Series DC Electronic Load

V1.0

December 2025

1. SCPI Reference

This chapter includes the following contents.

- Command parser—— learn the command parser rules
- Command syntax—— writing rule for command line
- Query syntax —— writing rule for query command
- Query response—— the format of query response
- Command reference

This section provides all the SCPI commands used by the instrument, the user can fully control all the functions of the instrument by using these commands.

1.1 Command Parser

The host computer can send string of commands to the instrument and the command parser of the instrument starts to parsing after catching the terminator (\n) or an input buffer overflow.
For example
Valid command string:
AAA:BBB CCC;DDD EEE;:FFF
The instrument command parser is responsible for all command parsing and execution, and you must understand its parsing rules before writing a program.

1.1.1 Command Parser Rule

The command parser will only parse and respond to ASCII.
SCPI command string must use NL(' \n' ASCII 0x0A) as a terminator, and the command parser will start parsing when it receives the terminator or a buffer overflow occurs.
When the handshake command is open, the command parser sends each character back to the host as soon as it is received, and the host can continue to send the next character only after it receives this return character.
The command parser will terminate parsing immediately after parsing an error, and the current command will be invalidated.
The command parser will terminate parsing immediately after parsing a query command, and the following command string will be ignored.
The command parser is case-insensitive when parsing command strings.
The command parser supports abbreviated form of command, see the following section for details.

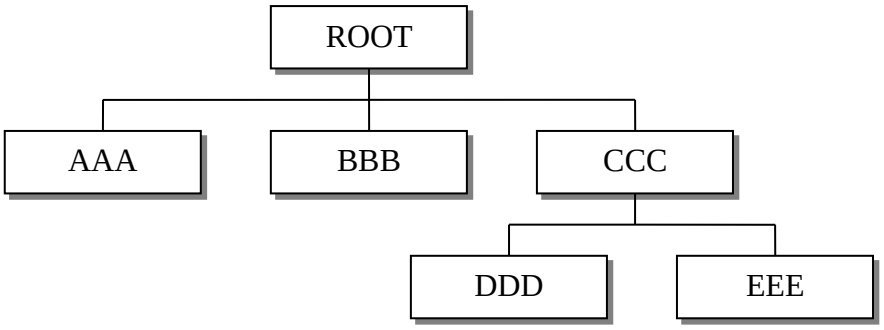
1.1.2 Symbol Stipulation and Definition

This chapter uses some symbols that are not part of the command tree, but only for a better understanding of the command string.
<> The text in angle brackets indicates the parameter of the command.
[ ] The text in square brackets indicates the optional command.
{} When the curly brackets contain several parameter items, it means that only one item can be selected from them.
( ) The abbreviated form of the parameter is enclosed in parentheses.
Capital letter Abbreviated form of the command.
□ Space character It represents a space and only for reading.

1.1.3 Command Tree Structure

SCPI commands have a tree-like structure with three level (Note: the command parser of this instrument can parse any level), where the highest level is called the subsystem command. SCPI uses a colon (:) to separate high level commands from low level commands.

Figure 0-1 Command Tree Structure



For example ROOT:CCC:DDD ppp
ROOT Subsystem command
CCC Second level
DDD Third level
ppp Parameter

1.2 Command and Parameter

A command tree is consist of command and [parameter], use a blank to separate (ASCII: 20H).
For example AAA:BBB 1.234
Command [parameter]

- Command

  Command words can be in long command format or in abbreviated form. Long format facilitates engineers to better understand the meaning of the command string; abbreviated form is suitable for writing.

- Parameter

■ Single character command, no parameter

For Example AAA:BBB

■ Parameter can be string format and its abbreviated form is also follow the last section "command abbreviated rule".

For example AAA:BBB 1.23

■ Parameter can be numerical value format
For example,
<integer>: integer 123, +123, -123
<float>: floating point number

<fixfloat>: fixed floating point number: 1.23, -1.23
<Sciloat>: floating point number represented by scientific notation: 1.23E+4, +1.23e-4
<mpfloat>: floating point number represented by multiplying power: 1.23k, 1.23M, 1.23G, 1.23u

Table 0-1 Abbreviation of Multiplying Power

Numerical Value	Multiplying Power
1E18 (EXA)	EX
1E15 (PETA)	PE
1E12 (TERA)	T
1E9 (GIGA)	G
1E6 (MEGA)	MA
1E3 (KILO)	K
1E-3 (MILLI)	M
1E-6 (MICRO)	U
1E-9 (NANO)	N
1E-12 (PICO)	P
1E-15 (PEMTO)	F
1E-18 (ATTO)	A

Note: The multiplying power is case-insensitive, and the writing is differently from the standard name.

- **Separator**

The instrument command parser can only receive allowable separator. Other separator will cause error "Invalid separator".
The allowable separator is as follows.
; Semicolon is for separating two commands.
For Example: AAA:BBB 100.0 ; CCC:DDD
: Colon is for separating command tree or restart the command tree.
For Example: AAA : BBB : CCC 123.4; : DDD : EEE 567.8
? Question mark is for querying.
For Example: AAA ?
□ **Blank** is for separating the parameter.
For Example: AAA:BBB□1.234

- **Error code**

Error code	Description
*E00	No error
*E01	Bad command
*E02	Parameter error
*E03	Missing parameter
*E04	Buffer overrun
*E05	Syntax error
*E06	Invalid separator
*E07	Invalid multiplier

*E08	Numeric data error
*E09	Value too long
*E10	Invalid command
*E11	Unknown error

1.3 Command Reference

All commands is explained by the subsystem command order. All subsystems are listed as follows.

- SOURce Setup subsystem
- SYSTem System subsystem
- MEASure Measurement subsystem

Common command

- IDN? Instrument query subsystem
- *RST Reset

1.4 SYSTem Subsystem

Figure 0-1 SYSTem subsystem tree

SYSTem	:ERRor[:NEXT]?	
	:ERRor:COUNt?	
	:VERSion?	
	:SENSe[:STATe]	{{1|0}, {ON|OFF}}}
	:SENSe[:STATe]?	
	:BEEPer[:STATe]	
	:BEEPer[:STATe]?	

*The parameter set by the command SYSTem Subsystem will not save to the system, it should be reset at the next boot.

- **SYSTem:ERRor[:NEXT]?**

SYSTem:ERRor[:NEXT]? Query the error message.

Query syntax	SYSTem:ERRor[:NEXT]?	// Query the error message
Query respond	Error message	

- **SYSTem:ERRor:COUNt?**

SYSTem:ERRor:COUNt? Query the number of error message.

Query syntax	SYSTem:ERRor:COUNt?	// Query the number of error message.
Query respond	Number of error message	

- **SYSTem:VERSion?**

SYSTem:VERSion? Query SCPI version.

Query syntax	SYSTem:VERSion?	// Query SCPI version
Query respond	Query SCPI version	

- **SYSTem:SENSe**

SYSTem:SENSe Switch on/off the sense compensation function.

Command syntax	SYSTem:SENSe[:STATe]<bool>	
Parameter	0|1 OFF|ON	
For example	SYST:SENSe ON	// Switch on the sense compensation function
Query syntax	SYSTem:SENSe?	// Query the state of sense compensation function
Query return	0|1	

- **SYSTem:BEEPer**

SYSTem:BEEPer Enable/disable the beeper.

Command syntax	SYSTem:BEEPer[:STATe]<bool>	
Parameter	0|1 OFF|ON	
For example	SYST:BEEP:STAT ON	// Enable the beeper
Query syntax	SYSTem:BEEPer?	// Query the state of the beeper
Query return	0|1	

- **[SOURce:]INPut**

[SOURce:]INPut Enable/disable the input.

Command syntax	[SOURce:]INPut[:STATe]<bool>	
Parameter	0|1 OFF|ON	
For example	INP 1	// Enable the input
Query syntax	INPut?	// Query the state of input
Query return	0|1	

- **[SOURce:]INPut:SHORt**

[SOURce:]INPut:SHORt Enable/disable input short-circuit

Command syntax	[SOURce:]INPut:SHORt[:STATe]<bool>

Parameter	0|1 OFF|ON	
For example	INP:SHOR 1	// Enable input short-circuit
Query syntax	INPut:SHOTt?	// Query the state of input short-circuit
Query return	0|1	

- **[SOURce:]SHORt:CURRent**

[SOURce:]SHORt:CURRent Set the short-circuit current

Command syntax	[SOURce:]SHORt:CURRent[:LEVel][:IMMediate][:AMPLitude] <NRF+>	
Parameter	0~MAX |MINimum|MAXsimum	
Unit	A	
Reset value	MINimum	
For example	SHOR:CURR 5	// Set the short-circuit current to 5 A
Query syntax	SHORt:CURRent?	/// Query the short-circuit current
Query return	<NR2>	

- **[SOURce:]FYNCtion**

- **[SOURce:]MODE**

The two commands are equivalent and can be used to select the input mode of load.

Command syntax [SOURce:]FUNCtion <function>

[SOURce:]MODE <function>

Parameter	Operation mode
CURRENT	Constant current
VOLTage	Constant voltage
POWer	Constant power
RESistance	Constant resistance
DYNamic	Dynamic
LED	LED
AUTOLIST	AUTOLIST
EFFEct	Load effect
DUAL	Combination
LIST	LIST

For example	MODE RES	// Set the input mode to CR
Query syntax	FUNCtion? or MODE?	//Query the input mode of load
Query return	<CRD>	

- **[SOURce:]CURRent:RANGe**

[SOURce:]CURRent:RANGe Set the current range.

Command syntax	[SOURce:]CURRent:RANGe<NRf+>
Parameter	0~MAX |MINimum|MAXimum

Unit	A
Reset value	MAXimum(Max)
For example	CURR:RANGE MIN // Set the current range to MIN
Query syntax	CURRent:RANGe? // Query the current range
Query return	<NR2>

- **[SOURce:]VOLTage:RANGe**

[SOURce:]VOLTage:RANGe Set the voltage range.

Command syntax	[SOURce:]VOLTage:RANGe<NRf+>
Parameter	0~MAX|MINimum|MAXimum
Unit	V
Reset value	MAXimum(Max)
For example	SOUR:VOLT:RANGE MIN // Set the voltage range to MIN
Query syntax	VOLTage:RANGe? // Query the voltage range
Query return	<NR2>

- **[SOURce:]CURRent:SLEW**

[SOURce:]CURRent:SLEW Set the rising and falling rate of the current.

Command syntax	[SOURce:]CURRent:SLEW[:BOTH]<NRf+>
Parameter	MIN~MAX|MINimum|MAXimum
Unit	A/us
Reset value	1
For example	CURR:SLEW 3 // Set the rising and falling rate of the current to 3 A/us
Query syntax	CURRent:SLEW? // Query the rising and falling rate of current
Query return	<NR2>

- **[SOURce:]CURRent:SLEW:RISE**

[SOURce:]CURRent:SLEW:RISE Set the rising rate of current.

Command syntax	[SOURce:]CURRent:SLEW:RISE<NRf+>
Parameter	MIN~MAX|MINimum|MAXimum
Unit	A/us
Reset value	1
For example	CURR:SLEW:RISE 3 // Set the rising rate of the current to 3 A/us
Query syntax	CURRent:SLEW:RISE? // Query the rising rate of the current
Query return	<NR2>

- **[SOURce:]CURRent:SLEW:FALL**

[SOURce:]CURRent:SLEW:FALL Set the falling rate of the current.

Command syntax	[SOURce:]CURRent:SLEW:FALL <NRf+>
Parameter	MIN~MAX |MINimum|MAXimum
Unit	A/us
Reset value	1
For example	CURR:SLEW:FALL 3 // Set the falling rate of the current to 3 A/us
Query syntax	CURRent:SLEW:FALL? // Query the falling rate of the current
Query return	<NR2>

- **[SOURce:]VOLTage:SLEW**

[SOURce:]VOLTage:SLEW Set the rising and falling rate of the voltage.

Command syntax	[SOURce:]VOLTage:SLEW[:BOTH] <NRf+>
Parameter	MIN~MAX |MINimum|MAXimum
Unit	A/ms
For example	VOLT:SLEW 0.3 // Set the rising and falling rate of the voltage to 0.3 V/ms
Query syntax	VOLTage:SLEW? // Query the rising and falling rate of the voltage
Query return	<NR2>

- **[SOURce:]CURRent:PROTection**

[SOURce:]CURRent:PROTection Set the current protection value.

Command syntax	[SOURce:]CURRent:PROTection[:LEVel] <NRF+>
Parameter	0~MAX |MINimum|MAXimum
Unit	A
Reset value	MAXimum
For example	CURR:PROT 3 // Set the current protection value to 3 A
Query syntax	CURRent:PROTection? // Query the current protection value
Query return	<NR2>

- **[SOURce:]VOLTage:PROTection**

[SOURce:]VOLTage:PROTection Set the voltage protection value.

Command syntax	[SOURce:]VOLTage:PROTection[:LEVel] <NRF+>
Parameter	0~MAX |MINimum|MAXimum
Unit	V
Reset value	MAXimum
For example	VOLT:PROT 3 // Set the voltage protection value to 3 V
Query syntax	VOLTage:PROTection? // Query the voltage protection value
Query return	<NR2>

- **[SOURce:]POWer:PROTection**

[SOURce:]POWer:PROTection Set the power protection value.

Command syntax	[SOURce:]POWer:PROTection[:LEVel]<NRF+>	
Parameter	0~MAX|MINimum|MAXimum	
Unit	W	
Reset value	MAXimum(Max)	
For example	POW:PROT 100	// Set the power protection value to 100 W
Query syntax	POWer:PROTection?	// Query the power protection value
Query return	<NR2>	

- **[SOURce:]VOLTage[:LEVel]:ON**

[SOURce:]VOLTage[:LEVel]:ON Set the start voltage of the load (Von).

Command syntax	[SOURce:]VOLTage:[LEVel:]ON <NRF+>	
Parameter	0~MAX|MINimum|MAXimum	
Unit	V	
Reset value	1	
For example	VOLT:ON 3	// Set the start voltage to 3 V
Query syntax	VOLTage:ON?	// Query the start voltage
Query return	<NR2>	

- **[SOURce:]VOLTage[:LEVel]:OFF**

[SOURce:]VOLTage[:LEVel]:OFF Set the stop voltage of the load (Voff).

Command syntax	[SOURce:]VOLTage:[LEVel:]OFF <NRF+>	
Parameter	0~MAX|MINimum|MAXimum	
Unit	V	
Reset value	0.5	
For example	VOLT:OFF 2	// Set the stop voltage to 2 V
Query syntax	VOLTage:OFF?	//Query the stop voltage
Query return	<NR2>	

- **[SOURce]:CURRent:PROTection:TIME**

[SOURce]:CURRent:PROTection:TIME Set the current protection time.

Command syntax	[SOURce]:CURRent:PROTection:TIME <NRF+>
Parameter	0~MAX|MINimum|MAXimum
Unit	mS
Reset value	0
For example	CURRent:PROTection:TIME 0.23

	// Set the current protection time to 0.23 mS
Query syntax	CURRent:PROTection:TIME? // Query the current protection time
Query return	<NR2>

- **[SOURce]:POWer:PROTection:TIME**

[SOURce]:POWer:PROTection:TIME Set the power protection time.

Command syntax	[SOURce]:POWer:PROTection:TIME <NRF+>
Parameter	0~MAX|MINimum|MAXimum
Unit	mS
Reset value	0
For example	POWer:PROTection:TIME 2 // Set the power protection time to 2 mS
Query syntax	POWer:PROTection:TIME? // Query the power protection time
Query return	<NR2>

- **[SOURce:]CURRent**

[SOURce:]CURRent Set the current in CC mode.

Command syntax	[SOURce:]CURRent[:LEVel][:IMMediate][:AMPLitude] <NRF+>
Parameter	0~MAX|MINimum|MAXimum
Unit	A
Reset value	MINimum
For example	CURR 5 // Set the current in CC mode to 5 A
Query syntax	CURRent? // Query the current in CC mode
Query return	<NR2>

- **[SOURce:]VOLTage**

[SOURce:]VOLTage Set the voltage in CV mode.

Command syntax	[SOURce:]VOLTage[:LEVel][:IMMediate][:AMPLitude] <NRF+>
Parameter	0~MAX|MINimum|MAXimum
Unit	V
Reset value	MAXimum
For example	VOLT 5 // Set the voltage in CV mode to 5 V
Query syntax	VOLTage? // Query the voltage in CV mode
Query return	<NR2>

- **[SOURce:]RESistance**

[SOURce:]RESistance Set the resistance in CR mode.

Command syntax	[SOURce:]RESistance[:LEVel][:IMMediate][:AMPLitude]<NRF+>
Parameter	0~MAX|MINimum|MAXimum
Unit	ohm
Reset value	MAXimum
For example	RES 5 // Set the resistance in CR mode to 5 ohm
Query syntax	RESistance? // Query the resistance in CR mode
Query return	<NR2>

- **[SOURce:]POWer**

[SOURce:]POWer Set the power in CP mode.

Command syntax	[SOURce:]POWer[:LEVel][:IMMediate][:AMPLitude]<NRF+>
Parameter	0~MAX|MINimum|MAXimum
Unit	W
Reset value	MINimum
For example	POW 10 // Set the power in CP mode to 10 W
Query syntax	POWer? // Query the power in CP mode
Query return	<NR2>

- **[SOURce:]SHORt:CURRent**

[SOURce:]SHORt:CURRent Set the current in short-circuit mode.

Command syntax	[SOURce]:SHORt:CURRent[:LEVel][:IMMediate][:AMPLitude]
Parameter	0~MAX|MINimum|MAXimum
Unit	A
Reset value	MINimum
For example	SHORt:CURRent 10 // Set the current in short-circuit mode to 10 A
Query syntax	SHORt:CURRent? // Query the current in short-circuit mode
Query return	<NR2>

- **[SOURce]:UNLoad:TIME**

[SOURce]:UNLoad:TIME Set the unload time.

Command syntax	[SOURce]:UNLoad:TIME
Parameter	0~MAX|MINimum|MAXimum|OFF
Unit	S
Reset value	0/OFF
For example	UNLoad:TIME 10 // Set the unload time to 10 s
Query syntax	UNLoad:TIME? // Query the unload time
Query return	<NR2>

- **[SOURce]:AUTO:VOLTage[:LEVel][:ON]**

[SOURce]:AUTO:VOLTage[:LEVel][:ON] Set the automatic voltage.

Command syntax	[SOURce]:AUTO:VOLTage[:LEVel][:ON]
Parameter	0~MAX|MINimum|MAXimum|OFF
Unit	V
Reset value	0/OFF
For example	AUTO:VOLTage 10 // Set the automatic voltage to 10 V
Query syntax	AUTO:VOLTage? // Query the automatic voltage
Query return	<NR2>

- **[SOURce]:UNDER:VOLTage:PROTection[:LEVel]**

[SOURce]:UNDER:VOLTage:PROTection[:LEVel] Set the voltage of OVP.

Command syntax	[SOURce]:UNDER:VOLTage:PROTection[:LEVel]
Parameter	0~MAX|MINimum|MAXimum
Unit	V
Reset value	0
For example	UNDER:VOLTage:PROTection 1 // Set the voltage of OVP to 1 V
Query syntax	UNDER:VOLTage:PROTection? // Query the unload voltage
Query return	<NR2>

- **[SOURce]:INPUT:INVERSION:TIME**

[SOURce]:INPUT:INVERSION:TIME Set the reversed connection protection time.

Command syntax	[SOURce]:INPUT:INVERSION:TIME
Parameter	0~MAX|MINimum|MAXimum
Unit	mS
Reset value	0
For example	INPUT:INVERSION:TIME 0.01 //Set the reversed connection protection time to 0.01 ms
Query syntax	INPUT:INVERSION:TIME? // Query the reversed connection protection time
Query return	<NR2>

- **[SOURce:]DYNamic:HIGH[:DWEL]**
- **[SOURce:]DYNamic:IA**

The two commands are equivalent and can be used to set the high current in the dynamic mode.

Command syntax	[SOURce:]DYNamic:HIGH[:LEVel]<NRF+> [SOURce:]DYNamic:IA[:LEVel]<NRF+>
Parameter	0~MAX|MINimum|MAXimum

Unit	A
Reset value	0
For example	DYN:HIGH 10 or DYN:IA 10 // Set the high current in the dynamic mode to 10 A
Query syntax	DYNamic:HIGH:LEVel? DYNamic:IA:LEVel? // Query the high current in the dynamic mode
Query return	<NR2>

- [SOURce:]DYNamic:HIGH[:DWEL]
- [SOURce:]DYNamic:TA

The two commands are equivalent and can be used to set the duration of high current in the dynamic mode.

Command syntax	[SOURce:]DYNamic:HIGH[:DWELI <NRF+> [SOURce:]DYNamic:TA[:DWELI] <NRF+>
Parameter	0.00001~50 |MINimum|MAXimum
Unit	s
Reset value	0.00001
For example	DYN:HIGH:DWELL 10 or DYN:TA:DWELL 10 // Set the duration of high current in the dynamic mode to 10 ms
Query syntax	DYNamic:HIGH:DWELI? DYNamic:TA:DWELI? // Query the duration of high current in the dynamic mode
Query return	<NR2>

- [SOURce:]DYNamic:LOW
- [SOURce:]DYNamic:IB

The two commands are equivalent and can be used to set the low current in the dynamic mode.

Command syntax	[SOURce:]DYNamic:LOW[:LEVel] <NRF+> [SOURce:]DYNamic:IB[:LEVel] <NRF+>
Parameter	0~MAX |MINimum|MAXimum
Unit	A
Reset value	0
For example	DYN:LOW 1 or DYN:IB 1 // Set the low current in the dynamic mode to 1 A
Query syntax	DYNamic:LOW? DYNamic:IB? // Query the low current in the dynamic mode
Query return	<NR2>

- [SOURce:]DYNamic:LOW[:DWEL]
- [SOURce:]DYNamic:TB

The two commands are equivalent and can be used to set the duration of low current in the dynamic

mode.

Command syntax	[SOURce:]DYNamic:LOW[:DWELl <NRF+> [SOURce:]DYNamic:TB[:DWELl] <NRF+>
Parameter	0.00001~50 |MINimum|MAXimum
Unit	s
Reset value	0.00002
For example	DYN:LOW:DWELL 10 or DYN:TB 10 // Set the duration of low current in the dynamic mode to 10 s
Query syntax	DYNamic:LOW:DWEL? DYNamic:TB? // Query the duration of low current in the dynamic mode
Query return	<NR2>

- **[SOURce:]DYNamic:SLEW**

[SOURce:]DYNamic:SLEW Set the current slope in the dynamic mode.

Command syntax	[SOURce:]DYNamic:SLEW <NRF+>
Parameter	MIN~MAX |MINimum|MAXimum
Unit	A/us
Reset value	MAX
For example	DYN:SLEW 3 // Set the current slope in the dynamic mode to 3 A/us
Query syntax	DYNamic:SLEW? // Query the current slope in the dynamic mode
Query return	<NR2>

- **[SOURce:]DYNamic:SLEW:RISE**

[SOURce:]DYNamic:SLEW:RISE Set the rising current in the dynamic mode.

Command syntax	[SOURce:]DYNamic:SLEW:RISE <NRF+>
Parameter	MIN~MAX |MINimum|MAXimum
Unit	A/us
Reset value	MAX
For example	DYN:SLEW:RISE 3 // Set the rising current in the dynamic mode to 3 A/us
Query syntax	DYNamic:SLEW:RISE? // Query the rising current in the dynamic mode
Query return	<NR2>

- **[SOURce:]DYNamic:SLEW:FALL**

[SOURce:]DYNamic:SLEW:FALL Set the falling current in the dynamic mode.

Command syntax	[SOURce:]DYNamic:SLEW:FALL <NRF+>
Parameter	MIN~MAX |MINimum|MAXimum

Unit	A/us
Reset value	MAX
For example	DYN:SLEW:FALL 3 // Set the falling current in the dynamic mode to 3 A/us
Query syntax	DYNamic:SLEW:FALL? // Query the falling current in the dynamic mode
Query return	<NR2>

- **[SOURce:]DYNamic:MODE**

[SOURce:]DYNamic:MODE Set the operation mode in the dynamic mode.

Command syntax	[SOURce:]DYNamic:MODE <mode>
Parameter	CONTinuous|PULSe|TOGGle
Reset value	CONTinuous
For example	DYN:MODE PULS // Set the operation mode in the dynamic mode to pulse
Query syntax	DYNamic:MODE? // Query the operation mode in the dynamic mode
Query return	<CRD>

- **[SOURce:]LED:VOLTage**

[SOURce:]LED:VOLTage Set LED Vo.

Command syntax	[SOURce:]LED:VOLTage <NRF+>
Parameter	0.001~MAX
For example	LED:VOLT 18 // Set LED Vo to 18
Query syntax	LED:VOLTage? // Query LED Vo
Query return	<NR2>

- **[SOURce:]LED:CURRent**

[SOURce:]LED:CURRent Set LED Io.

Command syntax	[SOURce:]LED:CURRent <NRF+>
Parameter	0~MAX
For example	LED:CURR 0.35 // Set LED Io to 0.35
Query syntax	LED:CURRent? // Query LED Io
Query return	<NR2>

- **[SOURce:]LED:RCOeff**

[SOURce:]LED:RCOeff Set LED Rd Coeff.

Command syntax	[SOURce:]LED:RCOeff <NRF+>
Parameter	0.001~1
For example	LED:RCO 0.2 // Set LED Rd Coeff to 0.2
Query syntax	LED:RCOeff? // Query LED Rd Coeff

Query return	<NR2>

- **MEASure:VOLTage?**

MEASure:VOLTage? Read the average voltage.

Query syntax	MEASure[:SCALar]:VOLTage[:DC]?
For example	MEAS:VOLT? // Query the average voltage
Query return	<NR2>

- **MEASure:VOLTage:MAXimum?**

MEASure:VOLTage:MAXimum? Read the Vp+ (voltage peak).

Query syntax	MEASure[:SCALar]:VOLTage:MAXimum?
For example	MEAS:VOLT:MAX? // Query the Vp+ (voltage peak)
Query return	<NR2>

- **MEASure:VOLTage:MINimum?**

MEASure:VOLTage:MINimum? Read the Vp- (minimum voltage).

Query syntax	MEASure[:SCALar]:VOLTage:MINimum?
For example	MEAS:VOLT:MIN? // Query the Vp- (minimum voltage)
Query return	<NR2>

- **MEASure:VOLTage:PTPeak?**

MEASure:VOLTage:PTPeak? Read the Vpp (peak-to-peak voltage).

Query syntax	MEASure[:SCALar]:VOLTage:PTPeak?
For example	MEAS:VOLT:PTP? // Query the Vpp (peak-to-peak voltage)
Query return	<NR2>

- **MEASure:CURRent?**

MEASure:CURRent? Read the average current.

Query syntax	MEASure[:SCALar]:CURRent[:DC]?
For example	MEAS:CURR? // Query the average current
Query return	<NR2>

- **MEASure:CURRent:MAXimum?**

MEASure:CURRent:MAXimum? Read the Ip+ (current peak).

Query syntax	MEASure[:SCALar]:CURRent:MAXimum?
For example	MEAS:CURR:MAX? // Query the Ip+ (current peak)
Query return	<NR2>

- **MEASure:CURRent:MINimum?**

MEASure:CURRent:MINimum? Read the Ip- (minimum current)

Query syntax	MEASure[:SCALar]:CURRent:MINimum?
For example	MEAS:CURR:MIN? // Query the Ip- (minimum current)
Query return	<NR2>

- **MEASure:CURRent:PTPeak?**

MEASure:CURRent:PTPeak? Read the Ipp (peak-to-peak current).

Query syntax	MEASure[:SCALar]:CURRent:PTPeak?
For example	MEAS:CURR:PTP? // Query the Ipp (peak-to-peak current)
Query return	<NR2>

- **MEASure:POWer?**

MEASure:POWer? Read the average power.

Query syntax	MEASure[:SCALar]:POWer[:DC]?
For example	MEAS:POW? // Query the average power
Query return	<NR2>

- **MEASure:RESistance?**

MEASure:RESistance? Read the equivalent resistance.

Query syntax	MEASure[:SCALar]:RESistance[:DC]?
For example	MEAS:RES? // Query the equivalent resistance
Query return	<NR2>

- **MEASure:REAL?**

MEASure:REAL? Acquire the measurement data set in real time.

Query syntax	MEASure[:SCALar]:REAL[:DC]?
For example	MEAS:REAL? // Query the measurement data set in real time
Query return	<NR2>

- **MEASure:RATE**

MEASure:RATE Set the test speed.

Command syntax	MEASure:RATE <speed>	
Parameter	HIGH|FAST| MEDIUM|SLOW	
For example	MEASure:RATE FAST	// Set the test speed
Query syntax	MEASure:RATE?	// Query the test speed
Query return	Speed	

- **OCP[:STATe]**

OCP[:STATe] Start or stop the OCP test.

Command syntax	OCP[:STATe]<bool>	
Parameter	0|1 OFF|ON	
For example	OCP ON	// Start the OCP test
Query syntax	OCP?	// Query the state of the OCP test
Query return	0|1	

- **OCP:ISTart**

OCP:ISTart Set the start current of the OCP.

Command syntax	OCP:ISTart <NRF+>	
Parameter	0~MAX	
Unit	A	
For example	OCP:IST 3	// Set the start current of the OCP to 3 A
Query syntax	OCP:ISTart?	// Query the start current of the OCP
Query return	<NR2>	

- **OCP:IEND**

OCP:IEND Set the cut-off current of the OCP.

Command syntax	OCP:IEND <NRF+>	
Parameter	0~MAX	
Unit	A	
For example	OCP:IEND 6	// Set the cut-off current of the OCP to 6 A
Query syntax	OCP:IEND?	// Query the cut-off current of the OCP
Query return	<NR2>	

- **OCP:STEP**

OCP:STEP Set the current rising step of the OCP.

Command syntax	OCP:STEP <NRF+>	
Parameter	1~1000	
For example	OCP:STEP 500	// Set the current rising step of the OCP to 500

Query syntax	OCP:STEP? // Query the current rising step of the OCP
Query return	<NR2>

- **OCP:DWELI**

OCP:DWELI Set the single step hold time of the OCP.

Command syntax	OCP:DWELI <NRF+>
Parameter	0.00001~0.99999
Unit	s
For example	OCP:DWELI 0.01 // Set the single step hold time of the OCP 0.01s.
Query syntax	OCP:DWELI? // Query the single step hold time of the OCP
Query return	<NR2>

- **OCP:VTRig**

OCP:VTRig Set the trigger level of the OCP.

Command syntax	OCP:VTRig <NRF+>
Parameter	0~MAX
Unit	V
For example	OCP:VTRig 11.8 // Set the trigger level of the OCP to 11.8 V
Query syntax	OCP:VTRig? // Query the trigger level of the OCP
Query return	<NR2>

- **OCP:RESult?**

OCP:RESult? Query the current of the OCP.

Query syntax	OCP:RESult?
Unit	A
For example	OCP:RES? // Query the current of the OCP
Query return	<NR2> -1 indicates that the test is not over. -2 indicates that the measured supply voltage has not fallen to Vtrig, i.e. has not entered the OCP protection state.

- **OCP:RESult:PMAX?**

OCP:RESult:PMAX? Query PMAX.

Query syntax	OCP:RESult:PMAX?
Unit	W, V, A
For example	OCP:RES:PMAX? //Query PMAX

Query return	<NR2>, <NR2>, <NR2> // indicates the maximum output power of the PMAX, and the voltage and current at this point

- **OVP[:STATe]**

OVP[:STATe] Start or stop the OVP.

Command syntax	OVP[:STATe] <bool>	
Parameter	0|1 OFF|ON	
For example	OVP ON	// Start the OVP
Query syntax	OVP[:STATe]?	/ /Query the state of the OVP
Query return	0|1	

- **OVP:VTRig**

OVP:VTRig Set the trigger level of the OVP.

Command syntax	OVP:VTRig <NRF+>	
Parameter	0~MAX	
Unit	V	
For example	OVP:VTR 11.8	// Set the trigger level of the OVP to 11.8 V
Query syntax	OVP:VTRig?	// Query the trigger level of the OVP
Query return	<NR2>	

- **OVP:RESult?**

OVP:RESult? Query the voltage of the OVP.

Query syntax	OVP:RESult?	
Unit	V	
For example	OVP:RES?	// Query the voltage of the OVP
Query return	<NR2> -1 indicates that the test is not over. -2 indicates that the OVP test has not started.	

- **OVP:RESult:TIME?**

OVP:RESult:TIME? Query tovp.

Query syntax	OVP:RESult:TIME?	
Unit	s	
For example	OVP:RES:TIME?	//Query tovp
Query return	<NR2>	

- **PEAK[:STATe]**

PEAK[:STATe] Start or stop the peak test .

Command syntax	PEAK[:STATe]<bool>	
Parameter	0|1 OFF|ON	
For example	PEAK ON	// Start the peak test
Query syntax	PEAK[:STATe]?	//Query the state of the peak test
Query return	0|1	

- **PEAK:CLEar**

PEAK:CLEar Clear the peak record.

Command syntax	PEAK:CLEar
For example	PEAK:CLE

- **PEAK:VOLTage:MAXimum?**

PEAK:VOLTage:MAXimum? Read the maximum of voltage.

Query syntax	PEAK:VOLTage:MAXimum?	
For example	PEAK:VOLT:MAX?	// Query the maximum of voltage
Query return	<NR2>	

- **PEAK:VOLTage:MINimum?**

PEAK:VOLTage:MINimum? Read the minimum of voltage.

Query syntax	PEAK:VOLTage:MINimum?	
For example	PEAK:VOLT:MIN?	// Query the minimum of voltage
Query return	<NR2>	

- **PEAK:CURRent:MAXimum?**

PEAK:CURRent:MAXimum? Read the maximum of current.

Query syntax	PEAK:CURRent:MAXimum?	
For example	PEAK:CURR:MAX?	// Query the maximum of current
Query return	<NR2>	

- **PEAK:CURRent:MINimum?**

PEAK:CURRent:MINimum? Read the minimum of current.

Query syntax	PEAK:CURRent:MINimum?
For example	PEAK:CURR:MIN? // Query the minimum of current
Query return	<NR2>

- **CAPacity[:STATe]**

CAPacity[:STATe] Start or stop the CAPacity test.

Command syntax	CAPacity[:STATe]<bool>
Parameter	0|1 OFF|ON
For example	CAP ON // Start the CAPacity test
Query syntax	CAPacity[:STATe]? // Query the state of the CAPacity test
Query return	0|1

- **CAPacity:CLEar**

CAPacity:CLEar Clear the capacitance record.

Command syntax	CAPacity:CLEar
For example	CAP:CLE

- **CAPacity:AH?**

CAPacity:AH? Read the Ah capacitance record.

Query syntax	CAPacity:AH?
Unit	Ah
For example	CAP:AH? // Query the Ah capacitance record
Query return	<NR2>

- **CAPacity:WH?**

CAPacity:WH? Read the Wh capacitance record.

Query syntax	CAPacity:WH?
Unit	Wh
For example	CAP:WH? //Query the Wh capacitance record
Query return	<NR2>

- **[SOURce:]BATtery:MODE**

[SOURce:]BATtery:MODE Set the operation mode in the battery mode .

Command syntax	[SOURce:]BATtery:MODE <mode>
Parameter	CURRent | RESistance | POWer
Reset value	CURRent
For example	BAT:MODE CURR // Set the operation mode in the battery mode to CC
Query syntax	[SOURce:]BATtery:MODE? // Query the operation mode in the battery mode
Query return	<mode>

- **[SOURce:]BATtery:CURRent**

[SOURce:]BATtery:CURRent Set the load range of CC mode in the battery mode.

Command syntax	[SOURce:]BATtery:CURRent <NRF+>
Parameter	0~30 | MINimum | MAXimum
Unit	A
Reset value	0
For example	BAT:CURR 3 // Set the load range of CC mode in the battery mode to 3 A
Query syntax	[SOURce:]BATtery:CURRent? // Query the load range of CC mode in the battery mode
Query return	<NR2>

- **[SOURce:]BATtery:POWer**

[SOURce:]BATtery:POWer Set the load range of CP mode in the battery mode.

Command syntax	[SOURce:]BATtery:POWer <NRF+>
Parameter	0~400 | MINimum | MAXimum
Unit	W
Reset value	0
For example	BAT: POW 3 // Set the load range of CC mode in the battery mode to 3 W
Query syntax	[SOURce:]BATtery:POWer? // Query the load range of CP mode in the battery mode
Query return	<NR2>

- **[SOURce:]BATtery:RESistance**

[SOURce:]BATtery:RESistance Set the load range of CR mode in the battery mode.

Command syntax	[SOURce:]BATtery:RESistance <NRF+>
Parameter	0~50000 | MINimum | MAXimum
Unit	ohm
Reset value	0

For example	BAT:RES 3 // Set the load range of CR mode in the battery mode to 3 ohm
Query syntax	[SOURce:]BATtery:RESistance? // Query the load range of CR mode in the battery mode
Query return	<NR2>

- **[SOURce:]BATtery:STOP**

[SOURce:]BATtery:STOP Set the stop parameter in the battery mode.

Command syntax	[SOURce:]BATtery:STOP[:BIT]
Parameter	CAPA|VOLT|TIME
Reset value	CAPA|VOLT|TIME
For example	BAT:STOP CAPA, VOLT, TIME // Set the stop parameter in the battery mode as C, V, T
Query syntax	[SOURce:]BATtery:STOP[:BIT]? // Query the stop parameter in the battery mode
Query return	CURR, VOLT, TIME

- **[SOURce:]BATtery:CAPAcity:Unloade**

[SOURce:]BATtery:CAPAcity:Unloade Set the stop capacitance in the battery mode.

Command syntax	[SOURce:]BATtery:CAPAcity:Unloade <NRF+>
Parameter	0~10000|MINimum|MAXimum
Unit	Ah/Wh is depend on BATtery:CAPAcity:UNIT
Reset value	0

For example	BAT:CAPA:Unloade 3
	// Set the stop capacitance in the battery mode to 3 Ah/Wh
	BAT:CAPA:Unloade AH,3
	// Set the stop capacitance in the battery mode to 3 Ah
	BAT:CAPA:Unloade WH,3
	// Set the stop capacitance in the battery mode to 3 Wh

Query syntax	[SOURce:]BATtery:CAPAcity:Unloade? //Query the stop capacitance in the battery mode
Query return	<NR2>

- **[SOURce:]BATtery[:VOLTage]:Unloade**

[SOURce:]BATtery:VOLTage:Unloade Set the stop voltage in the battery mode.

Command syntax	[SOURce:]BATtery:VOLTage:Unloade <NRF+>
Parameter	0~150|MINimum|MAXimum
Unit	V
Reset value	0
For example	BATtery:VOLTage:Unloade 3

	// Set the stop voltage in the battery mode to 3 V
Query syntax	[SOURce:]BATtery[:VOLTage]:Unloade?
	// Query the stop voltage in the battery mode
Query return	<NR2>

- **[SOURce:]BATtery:TIME:Unloade**

[SOURce:]BATtery:TIME:Unloade Set the stop time in the battery mode.

Command syntax	[SOURce:]BATtery:TIME:Unloade <NRF+>
Parameter	0~10000000 | MINimum | MAXimum
Unit	s
Reset value	0
For example	BATtery:TIME:Unloade 3
	// Set the stop time in the battery mode to 3s
Query syntax	[SOURce:]BATtery:TIME:Unloade?
	// Query the stop time in the battery mode
Query return	<NR2>

- **[SOURce:]BATtery:CAPAcity:UNIT**

[SOURce:]BATtery:CAPAcity:UNIT Set the capacitance unit in the battery mode.

Command syntax	[SOURce:]BATtery:CAPAcity:UNIT <unit>
Parameter	Ah | Wh
Reset value	Ah
For example	BATtery:CAPAcity:UNIT Ah
	// Set the capacitance unit in the battery mode to Ah
Query syntax	[SOURce:]BATtery:CAPAcity:UNIT?
	// Query the capacitance unit in the battery mode
Query return	<unit>

- **[SOURce:]TIMing:RESult?**

[SOURce]:BATtery:RESult? Acquire the result of battery test.

Query syntax	[SOURce]:BATtery:RESult?
Unit	s
For example	BATtery:RESult? // Query the result of battery test
Query return	<NR2>

- **[SOURce]:BATtery:CAPAcity[:REAL]?**

[SOURce]:BATtery:CAPAcity[:REAL]? Query the capacitance of the battery test.

Query syntax	[SOURce]:BATtery:CAPAcity[:REAL]?

Unit	s
For example	BATtery:CAPAcity? // Query the capacitance of the battery test
Query return	<NR2>

- **[SOURce:]TIMing[:STATe]**

[SOURce:]TIMing**[:STATe]** Start or stop the TIMing test.

Command syntax	[SOURce:]TIMing[:STATe]<bool>
Parameter	0|1 OFF|ON
For example	TIM ON // Start the TIMing test
Query syntax	[SOURce:]TIMing[:STATe]? // Query the state of TIMing test
Query return	0|1

- **[SOURce:]TIMing:LOAD:MODE**

[SOURce:]TIMing:LOAD:MODE Set the load mode under the TIMing test.

Command syntax	[SOURce:]TIMing:LOAD:MODE <mode>
Parameter	CURR|VOLT|POW|RES|OFF
For example	TIMing:LOAD:MODE CURR // Set the load mode under the TIMing test to CC
Query syntax	[SOURce:]TIMing:LOAD:MODE? // Query the load mode under the TIMing test
Query return	<mode>

- **[SOURce:]TIMing:LOAD:VALue**

[SOURce:]TIMing:LOAD:VALue Set the load value under the TIMing test.

Command syntax	[SOURce:]TIMing:LOAD:VALue <NRF+>
Parameter	A/V/W/ohm depends on TIMing:LOAD:MODE
For example	TIM:LOAD:VAL 1 // Set the load current under the TIMing test to 1 A
Query syntax	[SOURce:]TIMing:LOAD:VALue? // Query the load value under the TIMing test
Query return	<NR2>

- **[SOURce:]TIMing:TSTart:SOURce**

[SOURce:]TIMing:TSTart:SOURce Set the trigger source for the start test.

Command syntax	[SOURce:]TIMing:TSTart:SOURce <source>
Parameter	VOLT | CURR | EXT
For example	TIM:TST:SOUR VOLT // Set the trigger source of the start test as voltage

Query syntax	[SOURce:]TIMing:TSTart:SOURce? // Query the trigger source of the start test
Query return	<source>

- **[SOURce:]TIMing:TSTart:EDGE**

[SOURce:]TIMing:TSTart:EDGE Set the trigger edge of the start test.

Command syntax	[SOURce:]TIMing:TSTart:EDGE <edge>
Parameter	RISE|FALL
For example	TIM:TST:EDGE RISE // Set the trigger edge of the start test to rising edge
Query syntax	[SOURce:]TIMing:TSTart:EDGE? // Query the trigger edge of the start test
Query return	<edge>

- **[SOURce:]TIMing:TSTart:LEVel**

[SOURce:]TIMing:TSTart:LEVel Set the trigger level of the start test.

Command syntax	[SOURce:]TIMing:TSTart:LEVel <NRF+>
Parameter	Depends on TIMing:TSTart:SOURce
For example	TIM:TST:LEV 1 // Set the trigger level of the start test to 1V
Query syntax	[SOURce:]TIMing:TSTart:LEVel? // Query the trigger level of the start test
Query return	<NR2>

- **[SOURce:]TIMing:TEND:SOURce**

[SOURce:]TIMing:TEND:SOURce Set the trigger source of the stop test.

Command syntax	[SOURce:]TIMing:TEND:SOURce <source>
Parameter	VOLT|CURR|EXT
For example	TIM:TEND:SOUR VOLT // Set the trigger source of the stop test as voltage
Query syntax	[SOURce:]TIMing:TEND:SOURce? // Query the trigger source of the stop test
Query return	<source>

- **[SOURce:]TIMing:TEND:EDGE**

[SOURce:]TIMing:TEND:EDGE Set the trigger edge of the stop test.

Command syntax	[SOURce:]TIMing:TEND:EDGE <edge>
Parameter	RISE|FALL

For example	TIM:TEND:EDGE RISE // Set the trigger edge of the stop test to rising edge
Query syntax	[SOURce:]TIMing:TEND:EDGE? // Query the trigger edge of the stop test
Query return	<edge>

- **[SOURce:]TIMing:TEND:LEVel**

[SOURce:]TIMing:TEND:LEVel Set the trigger level of the stop test.

Command syntax	[SOURce:]TIMing:TEND:LEVel <NRF+>
Parameter	Depends on TIMing:TEND:SOURce
For example	TIM:TEND:LEV 1 // Set the trigger level of the stop test to 1 V
Query syntax	[SOURce:]TIMing:TEND:LEVel? // Query the trigger level of the stop test
Query return	<NR2>

- **[SOURce:]TIMing:RESult?**

[SOURce:]TIMing:RESult? Query the result of the TIMing test.

Query syntax	[SOURce:]TIMing:RESult?
Unit	s
For example	TIM:RES? // Query the result of the TIMing test
Query return	<NR2>

- **[SOURce]:LOAD:EFFEct:IMIN**

[SOURce]:LOAD:EFFEct:IMIN Set the low current in the load effect mode.

Command syntax	[SOURce]:LOAD:EFFEct:IMIN <NRF+>
Parameter	0~30A | MINimum | MAXimum
Unit	A
Reset value	0
For example	LOAD:EFFEct:IMIN 3 // Set the low current in the load effect mode to 3 A
Query syntax	LOAD:EFFEct:IMIN? // Query the low current in the load effect mode
Query return	<NR2>

- **[SOURce]:LOAD:EFFEct:IMAX**

[SOURce]:LOAD:EFFEct:IMAX Set the high current in the load effect mode.

Command syntax	[SOURce]:LOAD:EFFEct:IMAX <NRF+>

Parameter	0~30A | MINimum | MAXimum
Unit	A
Reset value	0
For example	LOAD:EFFEct:IMAX 3 // Set the high current in the load effect mode to 3 A
Query syntax	LOAD:EFFEct:IMAX? // Query the high current in the load effect mode
Query return	<NR2>

- **[SOURce]:LOAD:EFFEct:INORmal**

[SOURce]:LOAD:EFFEct:INORmal Set the operating current in the load effect mode.

Command syntax	[SOURce]:LOAD:EFFEct:INORmal <NRF+>
Parameter	0~30A | MINimum | MAXimum
Unit	A
Reset value	0
For example	LOAD:EFFEct:INOR 3 // Set the operating current in the load effect mode to 3 A
Query syntax	LOAD:EFFEct:INOR? // Query the operating current in the load effect mode
Query return	<NR2>

- **[SOURce]:LOAD:EFFEct:DELAY**

[SOURce]:LOAD:EFFEct:DELAY Set the single step test time in the load effect mode.

Command syntax	[SOURce]:LOAD:EFFEct:DELAY <NRF+>
Parameter	0~30A | MINimum | MAXimum
Unit	A
Reset value	0
For example	LOAD:EFFEct:DELAY 3 // Set the single step test time in the load effect mode
Query syntax	LOAD:EFFEct:DELAY? // Set the single step test time in the load effect mode
Query return	<NR2>

- **[SOURce]:LOAD:EFFEct:RESUlt?**

[SOURce]:LOAD:EFFEct:RESUlt Query the result of the load effect mode.

Command syntax	[SOURce]:LOAD:EFFEct:RESUlt? <NRF+>
Reset value	0
For example	LOAD:EFFEct:RESUlt // Query the result of the load effect mode 0.0123%,24.5234V,30.3567mohm
Query syntax	LOAD:EFFEct:RESUlt? // Query the result of the load effect mode

Query return	<NR2>

- **[SOURce]:DUAL:MODE**

[SOURce]:DUAL:MODE Set the combination mode.

Command syntax	[SOURce]:DUAL:MODE <NRF+>
Parameter	CR_CC | CV_CR | CV_CC
Reset value	CR_CC
For example	DUAL:MODE CR_CC // Set the combination mode: CR+CC
Query syntax	DUAL:MODE? // Query the combination mode
Query return	<NR2>

- **[SOURce]:DUAL:STEPA**

[SOURce]:DUAL:STEPA Set the step A value in the combination mode.

Command syntax	[SOURce]:DUAL:STEPA <NRF+>
Parameter	CR_CC | CV_CR | CV_CC
	0~30A | MINimum | MAXimum
Unit	A|V|OHM
Reset value	0

For example	DUAL:STEPA CR_CC,3
	// Set the operating resistance of STEPA to 3 ohm
	DUAL:STEPA 3
	// The unit of 3R/3V in the current combination mode is depends on the current mode

Query syntax	DUAL:STEPA?
	// Query the set value in the current combination mode
	DUAL:STEPA? CR_CC
	// Query the operating current of CR_CC mode

Query return	<NR2>

- **[SOURce]:DUAL:STEPB**

[SOURce]:DUAL:STEPA Set the step B value in the combination mode.

Command syntax	[SOURce]:DUAL:STEPB <NRF+>
Parameter	CR_CC | CV_CR | CV_CC
	0~30A | MINimum | MAXimum
Unit	A|V|OHM
Reset value	0

For example	DUAL:STEPB CR_CC,3
	// Set the operating current of STEPB to 3 A
	DUAL:STEPB 3
	// The unit of 3A/3V in the current combination mode is depends on the current

	mode

Query syntax	DUAL:STEPB?
	// Query the set value in the current combination mode
	DUAL:STEPB? CR_CC
	// Query the operating current of CR_CC mode

Query return	<NR2>

- **[SOURce]:DUAL: STATus?**

[SOURce]:DUAL:STATus? Query the current state of the combination mode.

Command syntax	[SOURce]:DUAL:STATus? <NRF+>
For example	DUAL:STATus? // Query the current state of the combination mode STEPB
Query syntax	DUAL:STATus? // Query the current state of the combination mode
Query return	<NR2>

- **[SOURce]LIST:COUNt**

[SOURce]LIST:COUNt Set the list count.

Command syntax	[SOURce]LIST:COUNt<Nrf+>
Parameter	1~9999999|MINimum
For example	LIST:COUN 10 // Set the list count to 10
Query syntax	[SOURce]LIST:COUN? // Query the list count
Query return	<NR2>

- **[SOURce]LIST:CURRent**

[SOURce]LIST:CURRent Set the current of each step in the list mode.

Command syntax	[SOURce]LIST:CURRent[:LEVel]<Nrf+>{,<Nef+>}
Parameter	0~MAX|MINimum|MAXimum
Unit	A
For example	LIST:CURR 0.5,1.0,1.5
Query syntax	[SOURce]LIST:CURRent[:LEvel]? // Query the current of each step in the list mode
Query return	<NR2>{,<NR2>}

- **[SOURce]LIST:CURRent:SLEW**

[SOURce]LIST:CURRent:SLEW Set the current change of each step in the list mode.

Command syntax	[SOURce]LIST:CURRent:SLEW<Nrf+>{,<Nef+>}
Parameter	MIN~MAX|MINimum|MAXimum
Unit	A/us
For example	LIST:CURR:SLEW 1.0,0.1,MAX

Query syntax	[SOURce]LIST:CURRent:SLEW? // Query the current change of each step in the list mode
Query return	<NR2>{,<NR2>}

- **[SOURce]LIST:DWELI**

[SOURce]LIST:DWELI Set the hold time of each step in the list mode.

Command syntax	[SOURce]LIST:DWELI<Nrf+>{,<Nrf+>}
Parameter	0.00001~9999999|MINimum|MAXimum
Unit	s
For example	LIST:DWELI 0.1,0.05,0.2
Query syntax	[SOURce]LIST:DWELI? // Query the hold time of each step in the list mode
Query return	<NR2>{,<NR2>}

- **[SOURce]LIST:STEP**

[SOURce]LIST:STEP Set the trigger mode in the list mode.

ONCE	Trigger once to execute a step
AUTO	Trigger once to execute a complete list
Command syntax	[SOURce]LIST:STEP<step>
Parameter	ONCE | AUTO
For example	LIST:STEP AUTO // Set the trigger mode in the list mode
Query syntax	[SOURce]LIST:STEP? // Query the trigger mode in the list mode
Query return	<CRD>

- **INITiate:NAME**

INITiate:NAME The list mode is read for execution.

Command syntax	INITiate:NAME LIST
For example	INIT:NAME LIST

1.5 *RST Subsystem

Restore to the default setting.

Command syntax	*RST
For example	Send >*RST <NL> No return >

1.6 *IDN? Subsystem

IDN? subsystem Return the instrument version number.

Query syntax	*IDN?
Query respond	< Manufacturer>,<MODEL>,<SN>,<Revision>,

For example	Send > *IDN? <NL> Return > UNIT,UTL1020S CDL1325350004,REV A1.0<NL>

1.7 Error Subsystem

Error subsystem	Acquire the latest error message
Query syntax	ERRor?
Query respond	Error string
For example	Send > ERR?<NL> Return > no error.<NL>

The error code is shown in the following table.

Error code	Description
*E00	No error
*E01	Bad command
*E02	Parameter error
*E03	Missing parameter
*E04	buffer overrun
*E05	Syntax error
*E06	Invalid separator
*E07	Invalid multiplier
*E08	Numeric data error
*E09	Value too long
*E10	Invalid command
*E11	Unknown error