

KEL2000 Series Communication Protocol V1.10

1. *IDN?

Return product information

XXXX,KEL2000,SN:1214534454,V1.10

2. *RCL<NR1>

NR1 {1~100}

*RCL 12

Recall 12 units' content

3. *SAV<NR1>

Save to the storage unit NR1{1~100}

*SAV 13

Note: *RCL can be recalled arbitrarily, and *SAV must be saved in CC, CV, CR or CW mode.

4. *TRG

Simulate a trigger, only valid in dynamic pulse (PL) mode and reversal (RL) mode.

5. :SYSTem:BEEP<bool>

Turn the beep ON or OFF.

:SYST:BEEP ON

Parameters: {1|0|ON|OFF}

Query syntax

:SYST:BEEP?

6. :SYSTem:LOCK<bool>

Turn ON and OFF the lock button

:SYST:LOCK ON

Parameters: {1|0|ON|OFF}

Query syntax:

:SYST:LOCK?

7. :SYSTem:EXIT<NR1>

1. Turn ON or OFF the external trigger

:SYST:EXIT 1

Parameters: {1|0|ON|OFF}

2. Turn ON the remote switch

:SYST:EXIT 2

Parameters: {2|0|OFF}

Query syntax :

:SYST:EXIT?

8. :SYSTem:COMPensate<bool>

Turn ON external compensation

:SYST:COMP ON

Parameters: {1|0|ON|OFF}

Query syntax:

:SYST:COMP?

9. :STATus?

Query the current status

Query syntax:

:STAT?

Return:

0,4,0,0,0,0

0 Beep Beep status

1 COM port baud rate (0,9600;1,19200;2,38400;3,57600;4,15200).

2 The Key LOCK status

3 External trigger status

4 Remote compensation status

5 Reverse connection status of load polarity (0-no reverse connection; 1-reverse connection)

10. INPut <bool>

Turn the load ON and OFF

Command syntax:

:INP 1

Parameters: {1|0|ON|OFF}

Query syntax:

:INP?

11. :VOLTage<NRf>

Set the current CV voltage

:VOLT 12.35V

Parameters: {MIN~MAX:0.1V~150V }

Query syntax:

:VOLT?

12. :VOLTage:UPPer<NRf>

Set the maximum voltage value.

:VOLT:UPP 18V

Parameters: {MIN~MAX:0.1V~150V }

Query syntax:

:VOLT:UPP?

13. :VOLTage:LOWer?

Query the minimum voltage.

14. :CURRent<NRf>

Set the CC current.

:CURR 3.350A

Parameters: {MIN~MAX:0A ~40A }

Query syntax:

:CURR?

15. :CURRent:UPPer<NRf>

Set the maximum current value.

:CURR:UPP 18A

Parameters: {0A~40A }

Query syntax:

:CURR:UPP?

16. :CURR:LOWer?

Query the minimum current value.

17. :RESistance<NRf>

Set the CR resistance value.

:RES 120.30OHM

Parameters: { 0.2000OHM ~7500OHM }

Query syntax:

:RES?

18. :RESistance:UPPer<NRf>

Set the maximum resistance value.

:RES:UPP 3600OHM

Parameters: { 0.2000OHM~7500OHM }

Query syntax:

:RES:UPP?

19. :RES:LOWer?

Query the minimum resistance value.

20. :POWer<NRf>

Set CW power.

:POW 12.5W

Parameters: { 0W ~300W }

Query syntax:

:POW?

21. :POW:UPPer<NRf>

Set the maximum power value.

:POW:UPP 18W

Parameters: { 0W~300W }

Query syntax:

:POW:UPP?

22. :POW:LOWer?

Query the minimum power value.

23. :MEASure:VOLTage?

Query output voltage value.

24. :MEASure:CURRent?

Query output current value.

25. :MEASure:POWer?

Query output power value.

26. :MEASure:TEMP?

Query temperature.

27. :FUNCtion<NR1>

Set the current mode.

:FUNC CC

Parameters: { CC|CV|CR|CW|SHORT}

Query syntax:

:FUNC?

28. :LIST

Set LIST

:LIST 4,3A,2,1A,0.1A/uS,5S,2A,0.1A/uS,5S,3

Parameters: 1 4, Unit 4

2 3A, set the CC range to 3A

3 2, number of steps in LIST

4 1A, step 1 current 1A

5 0.1A/uS, slope of step 1

6 5s, time 5s for step 1

7 2A, the current 2A of step 2

8 0.1A/uS, slope of step 2

9 5s, time 5s for step 2

10 3, repeated execution times 3.

29. :RCL:LIST<NR1>

Recall the LIST unit.

:RCL LIST 2

Parameters: {1~7}

Query syntax:

:RCL:LIST?

30. :OCP

Set up OCP operations

:OCP 2,15.0V,5.0S,3.0A,2.0A,0.1A,1.0S,1.0A,10.0V,1.5A,1.0A

Parameters: 1 2, store 2 units
2 15V,VON 15V
3 5.0S,VON DELAY 5S
4 3.0A, current range 3A
5 2.0A, starting current 2.0A
6 0.1A, step current 0.1A
7 1.0S, step delay 1.0S
8 1.0A, cut-off current 1A
9 10.0V, OCP voltage 10V
10 1.5A, overcurrent max. 1.5A
11 1.0A, the minimum value of overcurrent is 1.0A

31. :RCL:OCP<NR1>

Recall OCP unit.

:RCL OCP 2

Parameters: {1~7}

Query syntax:

:RCL:OCP?

Note: you need to recall first before querying.

32. :OPP

Set the OPP operation

:OPP 2,15.0V,5.0S,3.0A,50W,1W,1S,10W,20V,30W,10W

Parameters: 1 2, cell {1~7}
2 15V,VON 15V
3 5.0S,VON DELAY 5S
4 3.0A, current range 3A
5 50W, starting power 50W
6 1W, the stepping power is 1W
7 1S, step delay 1S
8 10W, cut-off power 10W
9 20V, OPP voltage 20V
10 30W, overpower max. 30W
11 10W, overpower min. 10W

33. :RCL:OPP<NR1>

Recall OPP unit.

:RCL OPP 2

Parameters: {1~7}

Query syntax:

:RCL:OPP?

Note: Before the query operation, the unit content needs to be recalled first.

34. :BATTery

Set up battery operation

:BATT 2,30A,7A,35V,11AH,50M

Parameters: 1 2, saved in unit 2 {1~7}
2 30A, battery range 30A
3 7A, the current starts at 7A
4 35V, discharge cut-off voltage 35V
5 11AH, discharge cut-off capacity 11AH
6 50M, discharge deadline 50 Minutes.

35. :RCL:BATTery<NR1>

Recall BATT unit 2.

:RCL BATT 2

Parameters: {1~7}

Query syntax:

:RCL:BATT?

Note: you need to recall first before querying.

36. :BATTery:TIM?

Query the battery discharge time.

37. :BATTery:CAP?

Query the battery discharge capacity AH.

Note: the above query commands only work in battery mode.

38. :RCL:CURVe

Set VI curve (VI):

:CURVe 2,1.01A,2.02A,0.12A,5S

Parameters: 1 2, cell {1~7 }

2 1.01A, starting current value

3 2.02A, ending current value

4 0.12A, step current value

5 5s, running time per step

39. : RCL:CURVe<NRL>

Recall VI curve 2 unit:

:RCL:CURVe 2

Query syntax:

:RCL:CURVe?

40. :DYNamic

Set Dynamics (CV):

:DYN 1,1.0001V,2.0003V,1.101HZ,50.001%

Parameters: 1 1,CV mode {1-CV;2-CC;3-CR;4-CW;5-PL;6-RL}

2 1.0001V, the first voltage value

3 2.0003V,the second voltage value

4 1.101HZ,switching frequency1.101HZ

5 50.001%, duty cycle 50.001%

Set dynamic (CC):

:DYN 2,0.212A/uS,0.80A/uS,0.400A,2.10A,101.5HZ,46.00%

Parameters: 1 2,CC mode {1-CV;2-CC;3-CR;4-CW;5-PL;6-RL}

2 0.212A/uS, rising slope

3 0.80A/uS, falling slope

4 0.400A, the first current value

5 2.10A, the second current value

6 101.5HZ, switching frequency101.5HZ

7 46.00%, duty cycle 46.00%

Set dynamic (CR):

:DYN 3,1.0001OHM,2.0003OHM,2.0HZ,60.0%

Set dynamic (CW):

:DYN 4,3.2W,8W,1HZ,40.0%

Set dynamic (RL):

:DYN 2,0.212A/uS,0.80A/uS,0.400A,2.10A,101.5HZ,46.00%

Set dynamic (PL):

:DYN 5,0.15A/uS,0.20A/uS,1.2A,3.10A

41. :RCL:DYNamic<NR1>

Recall dynamic mode.

:RCL:DYN 2

Parameters: {1|CV,2|CC,3|CR,4|CW,5|PL,6|RL}

Query syntax 1:

:RCL:DYN?

Query syntax 2:

:DYN ?

42. :SYSTEM:BAUDrate<NR1>

Set baud rate.

:SYST: BAUD 115200

Parameters: {9600|19200|38400|57600|115200}

Query syntax:

: :SYST: BAUD?

43. :SYSTEM:IPADdress<NR1>

Set IP address.

:SYST: IPAD 192.168.0.125

Query syntax:

: :SYST: IPAD?

44. :SYSTEM:SMASK<NR1>

Set subnet mask.

:SYST: SMASK 255.255.255.0

Query syntax:

: :SYST: SMASK?

This command is used for setting the gate way.

:SYST: GATE 192.168.0.1

Query syntax:

: :SYST: GATE?

45. :SYSTEM:PORT<NR1>

Set IP communication ports.

:SYST: PORT 18152

Parameters: {100~65535}

Query syntax:

: :SYST: PORT?

Note: the port can not be set to 18191.

46. :SYSTEM:RTC:YMD<YY,MM,DD>

Set RTC year, month, day.

:SYST: RTC:YMD 20,03,15

Parameters: {YY,MM,DD}

Query syntax:

: :SYST: RTC:YMD?

47. :SYSTem:RTC:HMS<hh,mm,ss >

Query RTC hour, minute, second.

:SYST: RTC:HMS 16,11,15

Parameters: {hh,mm,ss}

Query syntax:

: :SYST: RTC:HMS?

