B&K PRECISION®

Model: 9103, 9104

Switching DC Power Supplies

PROGRAMMING MANUAL

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1. USB Interface Connection

Users can remotely control the power supply via PC over the USB interface. Upon installation of the USB driver, the PC can control the instrument over virtual COM.

Connecting Instrument to PC

a) Download the USB drivers from www.bkprecision.com .
b) Connect the included USB cable to the power supply and the USB port on the PC.
c) When Windows recognizes the USB connection, do not follow the default Windows driver installation wizard. Simply run the setup file from the downloaded USB drivers and follow the prompt to install drivers.
d) The computer will recognize the instrument as a USB (virtual COM) device, it will be detected as a serial COM port. Windows will automatically assign a COM port to the instrument. Please verify which COM port Windows has assigned by going into Device Manager.

USB (Virtual COM) Configuration

The following serial port settings are used by the power supply.

- Baudrate: 9600
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow Control: None

2. Command Set

In order to use remote commands, please make sure to use the following communication settings:

1. ***Baud rate: 9600***
2. ***Data bits: 8***
3. ***Parity: none***
4. ***Stop bits: 1***

 If you are using HyperTerminal, make sure to check your ASCII setup to not append line feeds.

Command line format: **COMMAND<parameter1><parameter2>…[CR]**

#	Input Command and Return	Description	Example
1	SOUT< Output > [CR] *Return Value: [OK] [CR]*	Set Output on/off. Set Output off: < Output > =0 Set Output on: < Output > =1	Input Command: SOUT0[CR] Return Value: [OK] [CR] Result: Set Output off
2	GOUT[CR] *Return Value:<Output> [CR] [OK] [CR]*	Get Output Status. Output off: < Output > = 0 Output on: < Output > = 1	Input Command: GOUT [CR] Return Value: 0 [CR] [OK] [CR] Result: Output is off
3	VOLT< preset0/1/2/3><Voltage>[CR] *Return Value: [OK] [CR]*	Set output Voltage. *Set-Volt value relevance to preset Current value total power<160W .Max-Volt value refer to product specification	Input Command: VOLT 01000[CR] Return Value: [OK] [CR] Result: Set Memory preset 1 voltage value is 10.00V
4	CURR< preset0/1/2/3><Current> [CR] *Return Value: [OK] [CR]*	SET output Current. * Set-Cur value relevance to preset Volt value total power<160W .Max- Current value refer to product specification	Input Command: CURR 00100[CR] Return Value: [OK] [CR] Result: Set preset 1 Current value is 1.00A
5	SOVP<voltage >[CR] *[Return Value:[OK] [CR]*	Set Over Voltage value. <voltage> = ????	Input Command: SOVP4200[CR] Return Value: [OK] [CR] Result: Set upper limit of output Voltage 42.00V
6	GETD[CR] *Return Value: <Voltage ><Current> <CV/CC Mode> [CR] [OK] [CR]*	Get Reading Volt & Curr mode. <voltage> = ???? < Current > = ???? <CV Mode> =0 CV Mode <CV Mode> =1 CC Mode	Input Command: GETD [CR] Return Value: 050001000[CR] [OK] [CR] Result: The Display value is 5.00V and 1.00A. It is in CV mode.
7	SOCP<Current>[CR] *Return Value: [OK] [CR]*	Set Over current value. < Current > = ????	Input Command: SOCP1000[CR] Return Value: [OK] [CR] Result: Set upper limit of output Current 10.00A
8	GOVP[CR] *Return Value: <Voltage>[CR] [OK] [CR]*	Get upper limit of output Voltage. <voltage>=????	Input Command: GOVP [CR] Return Value: 4220 [CR] [OK] [CR] Result: upper limit of output Voltage is 42.40V
9	GOCP[CR] *Return Value:<Current>[CR] [OK] [CR]*	Get upper limit of output Current. < Current >=????	Input Command: GAGA [CR] Return Value: 1020 [CR] [OK] [CR] Result: upper limit of output Current is 10.20A

10	SETD<preset0/1/2/3><VOLTAGE> <CURRENT>[CR] *Return Value: [OK] [CR]*	SET preset0/1/2/3 Voltage and Current. <preset0/1/2/3> =0 preset1 <preset0/1/2/3> =1 preset2 <preset0/1/2/3> =2 preset3 <preset0/1/2/3> =3 Normal Mode <voltage> = ???? < Current > = ????	Input Command: SETD 005001000 [CR] Return Value: [OK] [CR] Result: Set preset1 voltage 5.00V Current 10.00A
11	GETS<preset0/1/2/3>[CR] *Return Value: <Voltage><Current>[CR] [OK] [CR]*	Get settings of preset0/1/2/3 Volt & Curr SET preset0/1/2/3 Voltage and Current <preset0/1/2/3> =0 preset1 <preset0/1/2/3> =1 preset2 <preset0/1/2/3> =2 preset3 <preset0/1/2/3> =3 Normal Mode <voltage> = ???? < Current >=????	Input Command: GETS0[CR] Return Value: 05000100[CR] [OK] [CR] Result: The Memory preset 1 voltage value is 5.00V and Current is 1.00A.
12	GABC[CR] *Return Value: < preset0/1/2/3> [CR] [OK] [CR]*	Get preset selection < preset0/1/2/3> =0 preset1 < preset0/1/2/3> =1 preset2 < preset0/1/2/3> =2 preset3 < preset0/1/2/3> =3 Normal Mode	Input Command: GABC [CR] Return Value: 0 [CR] [OK] [CR] Result: Preset Mode is Preset1
13	SABC< preset0/1/2/3>[CR] *Return Value: [OK] [CR]*	Set ABC select < preset0/1/2/3>=0 preset1 < preset0/1/2/3>=1 preset2 < preset0/1/2/3>=2 preset3 < preset0/1/2/3>=3 Normal Mode	Input Command: SABC 2[CR] Return Value: [OK] [CR] Result: Preset Mode is set to Preset3
14	GDLT<{0-5}>[CR] *Return Value: delta time [00-20] [CR] [OK] [CR]*	Get delta time setting value DeltaTime{0} : Time of Preset1 to Preset2 DeltaTime{1} : Time of Preset2 to Preset1 DeltaTime{2} : Time of Preset1 to Preset3 DeltaTime{3} : Time of Preset3 to Preset1 DeltaTime{4} : Time of Preset2 to Preset3 DeltaTime{5} : Time of Preset3 to Preset2 *Set- DeltaTime <=20S	Input Command: GDLT 0[CR] Return Value: 10 [CR] [OK] [CR] Result: DeltaTime[1] is 10S
15	SDLT <location {0-5}; time {00-20}>[CR] *Return Value: [OK] [CR]*	Set delta time. *Set- DeltaTime <=20S	Input Command: SDLT 205[CR] Return Value: 1 [CR] [OK] [CR] Result: DeltaTime[3] is set to 20S
16	GSWT<location {0-2}>[CR] *Return Value: SW time [000-600] [CR] [OK] [CR]*	Get SW time SwTime[1]: Time of Preset1 SwTime[2]: Time of Preset2 SwTime[3]: Time of Preset3 *Set- SwTime <=600S	Input Command: GSWT [CR] Return Value: 0100 [CR] [OK] [CR] Result: SwTime[1] is 100S
17	SSWT<location {0-2} time {000-600}> [CR] *Return Value: [OK] [CR]*	Set SW time *Set- SwTime <=600S	Input Command: SSWT0100[CR] Return Value: [OK] [CR] Result: SwTime[0] is set to 100S
18	RUNP< first {0-2}; end {0-2}>[CR] *Return Value: [OK] [CR]*	Run SW running Select what sequence will start running first and which one will be the last one to be run.	Input Command: RUNP 01[CR] Return Value: [OK] [CR] Result: start running SW run A_B

19	STOP[CR] *Return Value: [OK] [CR]*	Stop SW running	Input Command: STOP [CR] Return Value: [OK] [CR] Result: Stop SW running
20	SESS[CR] *Return Value: [OK] [CR]*	Disable Keyboard	Input Command: SESS [CR] Return Value: [OK] [CR] Result: Disable Keyboard
21	ENDS[CR] *Return Value: [OK] [CR]*	Enable Keyboard	Input Command: ENDS [CR] Return Value: [OK] [CR] Result: Enable Keyboard
22	GALL[CR] *Return Value:* *<AbcSele>* *<Get Channel>* *<Get UVL>* *<Get UCL>* *<Get Output >* *<Swtime[1]>* *<Swtime[2] >* *<Swtime[3] >* *<Deltatime[1-6]>* *<mode>* *<Setv[1]>* *<Seti[1] >* *<Setv[2] >* *<Seti[2] >* *<Setv[3]>* *<Seti[3] >* *<Setv[4] >* *<Seti[4]> [CR] [OK] [CR]*	Get information from Power Supply <AbcSele>　　　= ? <Get Channel> = ? <Get UVL>　　= ???? <Get UCL>　　= ???? <Get Output >　= ? <Swtime[1]>　= ??? <Swtime[2] >　= ??? <Swtime[3] >　= ??? <Deltatime[1-6]>= ???????????? <mode>　　　= ???? <Setv[1]>　　= ???? <Seti[1] >　　= ???? <Setv[2] >　　= ???? <Seti[2] >　　= ???? <Setv[3]>　　= ???? <Seti[3] >　　= ???? <Setv[4] >　　= ???? <Seti[4]>　　= ???? * Setv[4]　Normal Mode Voltage Seti[4]　Normal Mode Current	Input Command: GALL[CR] Return Value: 3 0 4220 1020 1 350 001 001 00 00 00 00 00 00 8160 1000 0100 2000 0200 3000 0300 4000 0400 [CR] [OK] [CR] Result: <AbcSele> =3 Normal Mode <Get Channel> =0 <Get UVL> =4220 <Get UCL> =1020 <Get Output > =1 <Swtime[1]> = 350 <Swtime[2] > = 001 <Swtime[3] > =001 <Deltatime[1]> =00 <Deltatime[2]> =00 <Deltatime[3]> =00 <Deltatime[4]> =00 <Deltatime[5]> =00 <Deltatime[6]> =00 <mode>　　= 8160 <Setv[1]>　　= 1000 <Seti[1] >　　=0100 <Setv[2] >　　=2000 <Seti[2] >　　=0200 <Setv[3]>　　=3000 <Seti[3] >　　=0300

			<Setv[4] > =4000 <Seti[4]> =0400
23	SETM[CR] <Setv[1] ><Seti[1] ><Swtime[1]><Setv[2] ><Seti[2]><Swtime[2]><Setv[3] ><Seti[3] ><Swtime[3]> [CR] *Return Value: [OK] [CR]*	Configure Preset1/2/3 <Setv[1] > =???? <Seti[1] > =???? <Swtime[1]>=??? <Setv[2] > =???? <Seti[2] > =???? <Swtime[2]>=??? <Setv[3] > =???? <Seti[3] > =???? <Swtime[3]>=???	Input Command: SETM 05001000010 13801000015 40000200020 [CR] Return Value: [OK] [CR] Result: preset1voltage is set to 5.00V Current10.00A SwTime 10S preset2voltage is set to 13.80V Current10.0A SwTime 15S preset3voltage is set to 40.00V Current2.0A SwTime 20S

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