

AC / DC kV Amplifier

EA2024



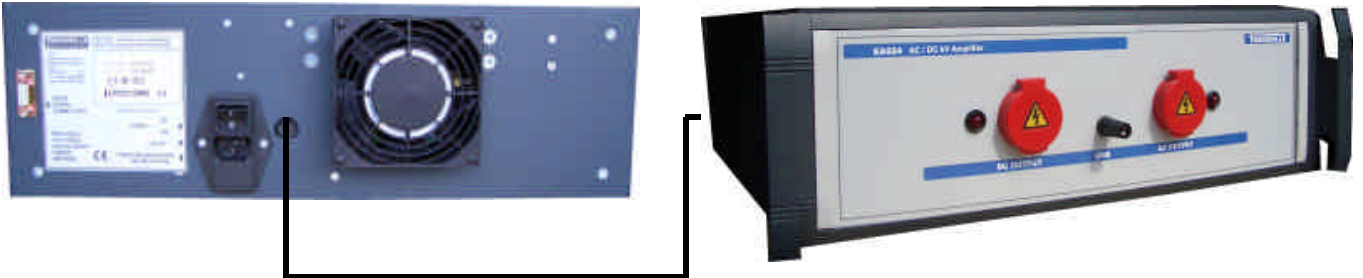
- DC Output 1 to 10 kVolts
- AC Voltage 1 to 5 kVolts
- Controlled by ProCal or VFP Software

Overview

Working with and controlled from the 2000 series calibrator the kV amplifier provides the solution to the calibration of High Voltage probes and dividers. The amplifier/calibrator combination can be used only with our VFP or ProCal Software.

KV Amplifier - Connections

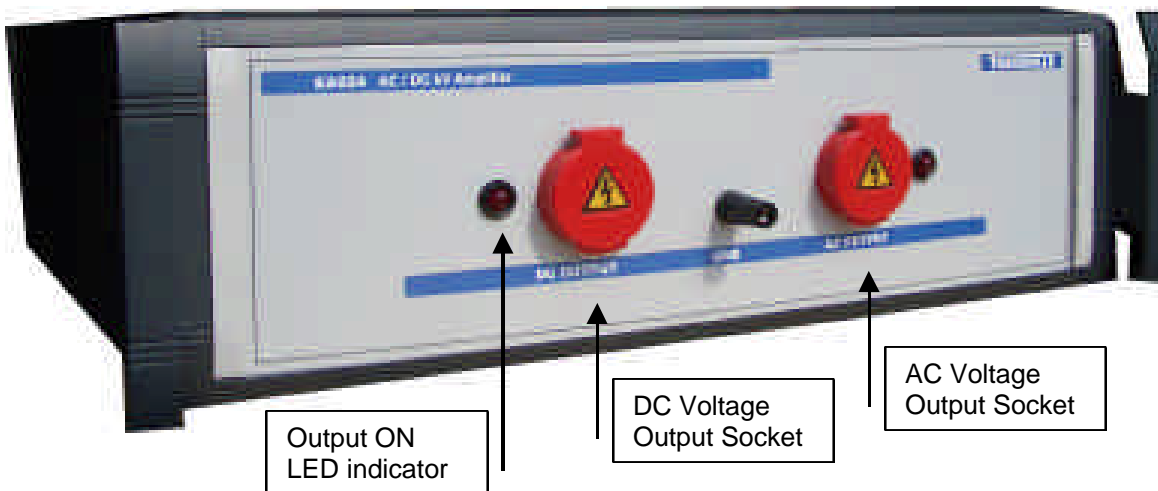
The kV amplifier unit has a built in connection lead to plug into the 2000 Series kV Amplifier output connector, as shown below :



Connection lead from rear of kV Amplifier to rear of **2000 Series calibrator**

Front Panel Terminal Connections

Connect for DC or AC output is via independent sockets, with each socket having an individual LED indicator. The ground connection is a 4mm terminal post.



Output ON LED indicator

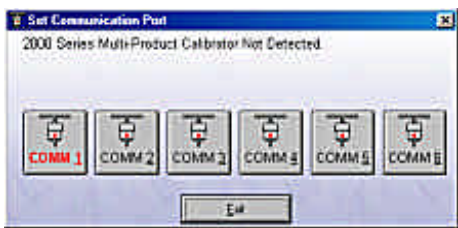
DC Voltage Output Socket

AC Voltage Output Socket

KV Amplifier – Virtual Front Panel Control

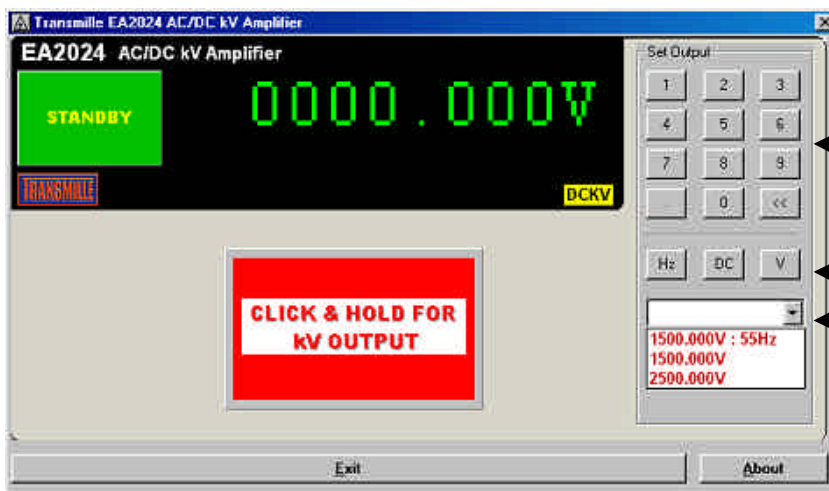


The initial startup screen will display first for 2 seconds.



If the 2000 Series VFP is not detected, or no COM port has been chosen before, the COM select screen will be displayed.

Simply select the COM port the 2000 Series calibrator is connected to and click to proceed.



Keypad entry of voltage / frequency

Function buttons for frequency (Hz), DC mode and Voltage

'Quick' list with recently entered values stored in a list.- simply select to reset output to these values.



Operation example

Type 2 5 0 0 V
Output will display 2500V DCKV
Click and hold output button for voltage

Type 1 5 0 0 V
Then type 5 5 Hz
Output will display 1500V 55Hz ACKV
Click and hold output button for voltage



KV Amplifier - Software Control

ⓘ **Important Note** : The kV Amplifier must be connected to a 2000 series calibrator - it cannot be used as a stand-alone unit.

Sending the commands below to the 2000 Series calibrator RS232 COM Port will set up the kV Amplifier for use

KV Amplifier Mode

Command	Description
D1	Set calibrator to kV Amplifier Mode
D0	Set calibrator to Normal Mode

kV Amplifier Function

Command	Description
R5	Set DC kV Function
R16	Set AC kV Function

KV Amplifier Output

Command	Description
O n n n (n =digit)	Set kV Output : Divide required voltage by 10 e.g. O50 = 500V • O100 = 1000V

All commands must be terminated with a carriage return (ASCII character 13), for example

@01 D1/R5/O50/S0>CR

This will set the kV amplifier to DC mode and output 500V (<CR> denotes a carriage return)

This will set the kV Amplifier to 5000V DC

@01 Directs the command to the COM port of the instrument at position 1 of the traceable instrument list in ProSet, e.g. the 2000 Series calibrator.

D1 Sets kV Amplifier mode on

R5 Sets 1000V DC Range for kV amplifier

O200 Sets 2000V Output value

S0 Turns output on

@01 D1/R16/O150/F60/S0>CR

This will set the kV Amplifier to 1500V 60Hz AC

@01 Directs the command to the COM port of the instrument at position 1 of the traceable instrument list in ProSet, e.g. the 2000 Series calibrator.

D1 Sets kV Amplifier mode on

R16 Sets 1000V AC Range for kV amplifier

O150 Sets 1500V Output value

F60 Sets 60Hz Frequency

S0 Turns output on

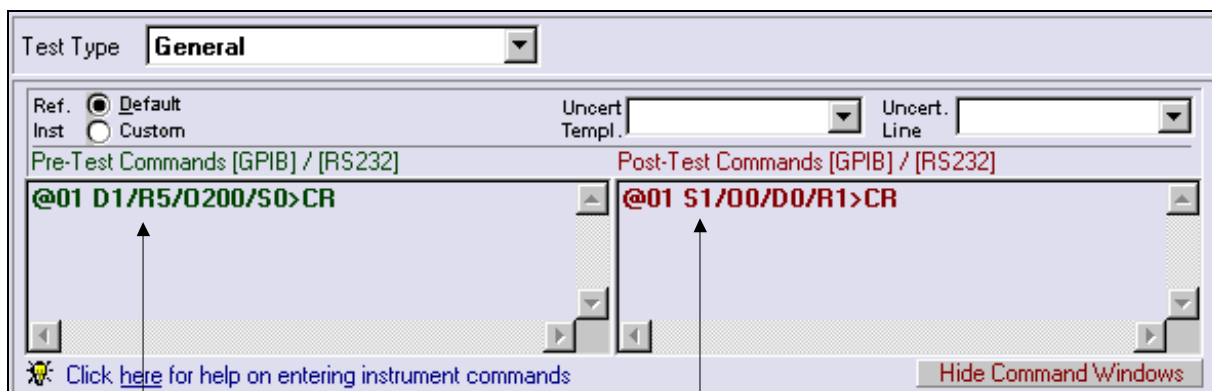
Serial commands to control the adaptor can be sent to the calibrator using either the Virtual Front Panel, ProCal Calibration Software or using any RS232 COM program, such as Hyper Terminal.

Controlling the adaptor using ProCal

Setting DCV output using the kV Amplifier

Commands to control the kV amplifier using ProCal can be added to each test of a ProCal procedure.

Use the instruments tab in ProEdit, and edit the **pre-test** and **post-test** command boxes to enter commands, as shown below :



Pre-Test Command

This will send the command

@01 D1/R5/O200/S0>CR

followed by a carriage return to the calibrator.

This will set the kV Amplifier to 2000V DC

@01 Directs the command to the COM port of the instrument at position 1 of the traceable instrument list in ProSet, e.g. the 2000 Series calibrator.

D1 Sets kV Amplifier mode on

R5 Sets 1000V DC Range for kV amplifier

O200 Sets 2000V Output value

S0 Turns output on

Post-Test Command

This will send the command

@01 S1/O0/D0/R1>CR

followed by a carriage return to the calibrator.

This will turn off the kV Amplifier mode and set the outputs to zero at the end of the test.

@01 Directs the command to the COM port of the instrument at position 1 of the traceable instrument list in ProSet, e.g. the 2000 Series calibrator.

S1 Turns output off (standby)

O0 Sets 0V Output value

D0 Turns off kV Amplifier mode on

R1 Sets lowest DCV Range

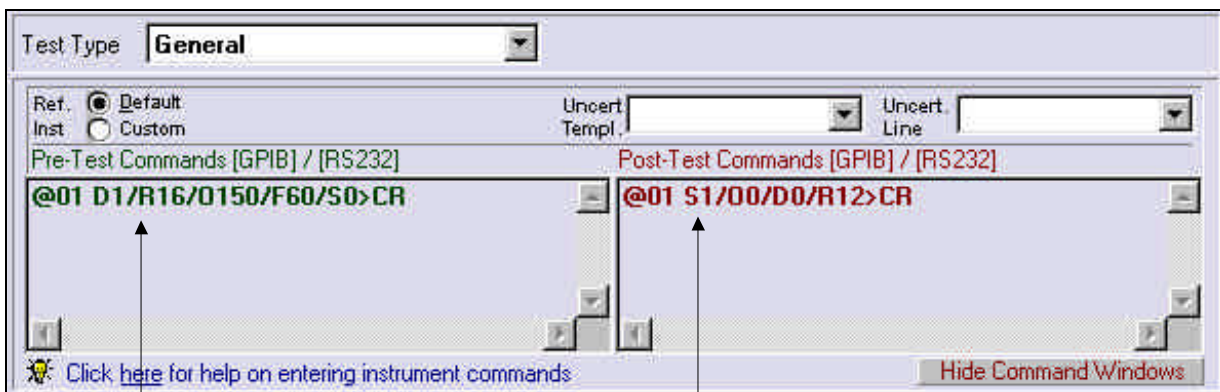
Note : To display a message on the 2000 Series display use the # command, for example

@01 #kV Amp : 1kV DC>CR

Setting ACV output using the kV Amplifier

Commands to control the kV amplifier using ProCal can be added to each test of a ProCal procedure.

Use the instruments tab in ProEdit, and edit the **pre-test** and **post-test** command boxes to enter commands, as shown below :



Pre-Test Command

This will send the command

@01 D1/R16/O150/F60/S0>CR

followed by a carriage return to the calibrator.

This will set the kV Amplifier to 1500V AC 60Hz

@01 Directs the command to the COM port of the instrument at position 1 of the traceable instrument list in ProSet, e.g. the 2000 Series calibrator.

D1 Sets kV Amplifier mode on

R16 Sets 1000V AC Range for kV amplifier

O150 Sets 1500V Output value

F60 Sets 60Hz Frequency

S0 Turns output on

Post-Test Command

This will send the command

@01 S1/O0/D0/R12>CR

followed by a carriage return to the calibrator.

This will turn off the kV Amplifier mode and set the outputs to zero at the end of the test.

@01 Directs the command to the COM port of the instrument at position 1 of the traceable instrument list in ProSet, e.g. the 2000 Series calibrator.

S1 Turns output off (standby)

O0 Sets 0V Output value

D0 Turns off kV Amplifier mode on

R12 Sets lowest ACV Range

Note : To display a message on the 2000 Series display use the # command, for example

@01 #kV Amp:1kV AC 60Hz>CR



kV Amplifier Option

For the 2000 Series Calibrators - requires PC running ProCal or VFP

Specifications

DC Voltage		AC Voltage	
Range	1kV to 10kVolts	Range	1kV to 5kV
Resolution	100mV	Resolution	100mV
Accuracy	0.5% O/P \pm 0.1% F.S.	Accuracy	0.8% O/P \pm 0.2% F.S.
DCI Load (Max.)	100uA	Freq. Range	50Hz to 60Hz

