

# TxCP vvv ccc High Voltage Desk Top Power Supply X= 1 or 2 channel Operators Manual

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## WARNING!

- It is not allowed to use the unit if the covers have been removed.
- It is not allowed to connect or disconnect the HV cable if HV is ON !
- We decline all responsibility for damages and injuries caused by an improper use of the module. It is highly recommended to read the operators manual before any kind of operation.

## Note

The information in this manual is subject to change without notice. We take no responsibility for any error in the document. We reserve the right to make changes in the product design without reservation and without notification to the users.

Filename TxCPxx\_0.5kV\_7kV\_eng.\_\_\_\_; Version 2.0 as of 08-04-28

## 1. General information

The model TxCP vv is a high voltage desk top supply which offer a very stable output voltage up to 10 kV for use in industry and research. The output is generated by means of a high voltage module of the CPS-series, which is supplied by means of an AC/DC converter.

### Main Characteristics:

- High voltage desk top power supplies with either front-panel or remote control via analogue I/O
- Output voltages with low ripple and noise
- Compact and ruggedized enclosure
- Output short circuit and overload protected
- Control manually, via analogue I/O and USB Interface

x channel HV-PS Tx	CP005 206	CP010 106	CP015 805	CP020 605	CP030 405	CP040 305	CP050 205	CP070 155
Output voltage $V_{Onom}$	500V	1kV	1.5kV	2kV	3kV	4kV	5kV	7kV
Output current $I_{Onom}$	20mA	10mA	8mA	6mA	4mA	3mA	2mA	1.5mA
Output polarity	Positive or negative, factory fixed							
Ripple and noise	typical $< 2 * 10^{-5} * V_{outmax}$ , max. $5 * 10^{-5} * V_{outmax}$							
Stability: $\frac{\Delta V_O}{\Delta V_{INPUT}}$	$< 1 * 10^{-4}$							
$\Delta V_O$ (no load/ load)	$< 2 * 10^{-4}$							
Temperature coefficient	$< 1 * 10^{-4}/K$							
Voltage measurement	resolution:	10 V / 4-digit LCD display						
	accuracy:	$\pm ( 1\% * V_{Onom} )$ (for one year)						
Voltage settings	manual:	via 10-turn potentiometer ("LOC")						
	REMOTE:	via analog I/O with $V_{SET/MON} = 0$ to 5 V ("REM") or RS232 ("RS232")						
Current measurement	resolution:	10 $\mu$ A / 4-digit LCD display						
	accuracy:	$\pm ( 1\% * I_{Onom} )$ (for one year)						
Current settings	manual:	via 10-turn potentiometer						
	REMOTE:	via analog I/O with $V_{SET/MON} = 0$ to 5 V ("REM") or RS232 ("RS232")						
Rate of change of output voltage	fixed: $V_{Onom} / 4s$ (at HV-ON/OFF)							
Protection	Output short circuit and overload protected. <b>Attention !</b> There is only one short circuit or arc per second allowed! The integral output current must limited to the max. output current of the module external otherwise. <b>Units must not be used without HV-Connectors plugged in!</b>							
REMOTE control	via analog I/O or USB interface							
Line voltage AC ( $V_{INPUT}$ )	100 to 240 V-AC; 50/60 Hz; fused with 2 A-slow							

## 2. Technical Data

x channel HV-PS TxCP		CP005 206 - CP070 155
Connectors	HV output: analogue I/O / RS232:	SHV male connector 9-pin male D-Sub connector
Desk case		Size (W/H/D) : (310/90/280, 310 with SHV) mm
Operating temperature		0 ... +40 °C
Storage temperature		-20 ... +60 °C
9-pin male D-Sub connector "analog I/O" and 9-pin female D-Sub connector "RS232" on the rear side		
PIN	Name	Description 9-pin male D-Sub connector "analog I/O"
1	n.c.	
2	V_I <sub>MON</sub>	Monitor voltage corresponding I <sub>O</sub> : I <sub>O</sub> = 0 to I <sub>Onom</sub> (R <sub>i</sub> = 10 kΩ) ⇒ V <sub>2,6</sub> = 0 to 5 V
3	INH	INHIBIT (TTL level, LOW ⇒ V <sub>O</sub> = 0, [LOW to] HIGH or open ⇒ V <sub>O</sub> = V <sub>SET</sub> with ramp)
4	V_I <sub>SET</sub>	Setting current (R <sub>IN</sub> = 10 kΩ): V <sub>4,6</sub> = 0 to 5 V ⇒ I <sub>O</sub> = 0 to I <sub>Onom</sub> n.c. ⇒ I <sub>Onom</sub> is possible
5	n.c.	
6	GND	GND = V <sub>SET_0V</sub> Signal 0 V (connected to the metal module box)
7	V_V <sub>MON</sub>	Monitor voltage corresponding V <sub>O</sub> : V <sub>O</sub> = 0 to V <sub>Onom</sub> (R <sub>OUT</sub> = 10 kΩ) ⇒ V <sub>7,6</sub> = 0 to 5 V
8	V_V <sub>SET</sub>	Setting voltage: V <sub>8,6</sub> = 0 to 5 V ⇒ V <sub>O</sub> = 0 to V <sub>Onom</sub> (R <sub>IN</sub> ≈ 300kΩ)
9	V <sub>REF</sub>	V <sub>9,6</sub> = 5 V ( 1 mA) Reference voltage for a external potentiometer (Sliding contact on V_V <sub>SET</sub> and/or V_I <sub>SET</sub> )

## 3. Front panel

