

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.

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1. General information

The model T1CP vvv is a high voltage desk top supply which offer a very stable output voltage up to 30 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 RS232 Interface

2. Technical Data

x channel HV-PS Tx	CP100 105	CP150 604	CP200 504	CP300 304
Output voltage $V_{O_{nom}}$	10kV	15kV	20kV	30kV
Output current $I_{O_{nom}}$	1mA	600 μ A	500 μ A	300 μ A
Output polarity	Positive or negative, factory fixed			
Ripple and noise	typical $< 2 * 10^{-5} * V_{outmax}$, max. $5 * 10^{-5} * V_{outmax}$			
Stability: $\frac{\Delta V_O}{\Delta V_{INPUT}}$	$< 1 * 10^{-4}$			
ΔV_O (no load/ load)	$< 2 * 10^{-4}$			
Temperature coefficient	$< 1 * 10^{-4}/K$			
Voltage resolution:	10 V / 4-digit LCD display			
measurement accuracy:	$\pm (1\% * V_{O_{nom}})$ (for one year)			
Voltage manual:	via 10-turn potentiometer ("LOC")			
settings REMOTE:	via analog I/O with $V_{SET/MON} = 0$ to 5 V ("REM") or RS232 ("RS232")			
Current resolution:	1 μ A / 4-digit LCD display			
measurement accuracy:	$\pm (1\% * I_{O_{nom}})$ (for one year)			
Current manual:	via 10-turn potentiometer			
settings REMOTE:	via analog I/O with $V_{SET/MON} = 0$ to 5 V ("REM") or RS232 ("RS232")			
Rate of change of output voltage	fixed: $V_{O_{nom}} / 4s$ (at HV-ON/OFF)			
Protection	Output short circuit and overload protected. Attention ! 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. Units must not be used without HV-Connectors plugged in!			
REMOTE control	via analog I/O or RS232 interface			
Line voltage AC (V_{INPUT})	100 to 240 V-AC; 50/60 Hz; fused with 2 A-slow			

x channel HV-PS TxCP	CP100 105 CP150 604	CP200 504 CP300 304
Connectors HV output: analogue I/O / RS232:	HV-plug socket 15kV: LEMO ERA.1Y.416.CLL 9-pin male D-Sub connector	HV-plug socket 30kV: LEMO ERA.3Y.425.CLL 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 _{MON}	Monitor voltage corresponding I _O : I _O = 0 to I _{O_{nom}} (R _i = 10 kΩ) ⇒ V ₂₋₆ = 0 to 5 V
3	INH	INHIBIT (TTL level, LOW ⇒ V _O = 0, [LOW to] HIGH or open ⇒ V _O = V _{SET} with ramp)
4	V_I _{SET}	Setting current (R _{IN} = 10 kΩ): V ₄₋₆ = 0 to 5 V ⇒ I _O = 0 to I _{O_{nom}} n.c. ⇒ I _{O_{nom}} is possible
5	n.c.	
6	GND	GND = V _{SET_0V} Signal 0 V (connected to the metal module box)
7	V_V _{MON}	Monitor voltage corresponding V _O : V _O = 0 to V _{O_{nom}} (R _{OUT} = 10 kΩ) ⇒ V ₇₋₆ = 0 to 5 V
8	V_V _{SET}	Setting voltage: V ₈₋₆ = 0 to 5 V ⇒ V _O = 0 to V _{O_{nom}} (R _{IN} ≈ 300kΩ)
9	V _{REF}	V ₉₋₆ = 5 V (1 mA) Reference voltage for a external potentiometer (Sliding contact on V_V _{SET} and/or V_I _{SET})

3. Front panel

