

T1DP 0vv iii High Voltage Desk Top Power Supply

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 T1DP 0vv iii is a high voltage desk top supply which offer a very stable output voltage up to 6 kV for use in industry and research. The output is generated by means of a high voltage module of the DPS-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
- Output voltages with very low ripple and noise
- Compact and ruggedized enclosure
- Polarity fixed ex works or switchable electronically with **option EPU**
- Output short circuit and overload protected
- Control manually, via analogue I/O and RS232 resp. USB Interface

2. Technical Data

1 channel HV-PS	T1DP	005 106	010 106	020 605	030 405	040 305	050 205	060 155
Output voltage V_{Onom}		500 V	1 kV	2 kV	3 kV	4 kV	5 kV	6 kV
Output current I_{Onom}		10 mA	10 mA	6 mA	4 mA	3 mA	2 mA	1,5 mA
Polarity		positive or negative ex works or switchable electronically at $V_{OUT} = 0$!						
Ripple & noise		typ. < 2 mV _{P-P} , max. 7 mV _{P-P}						
Stability:	$\Delta V_O / \Delta V_{INPUT}$	< $1 * 10^{-5}$						
	ΔV_O (no load to full load)	< $5 * 10^{-5}$						
Temperature coefficient		< $5 * 10^{-5}/K$						
Voltage measurement	Resolution:	$V_{Onom} < 1$ kV: 0,1 V ; $V_{Onom} \geq 1$ kV: 1 V / 4-digit LCD display						
	Accuracy:	$\pm (1\% * V_{Onom})$ (for one year)						
Voltage setting	manual:	via 10-turn potentiometer (" LOC ")						
	REMOTE:	via analog I/Omit $V_{SET/MON} = 0$ bis 5 V (" REM ") oder interface						
Current measurement	Resolution:	$I_{Onom} \geq 10$ mA: 10 μ A ; $I_{Onom} < 10$ mA: 1 μ A / 4-digit LCD display						
	Accuracy:	$\pm (1\% * I_{Onom})$ (for one year)						
Current setting	manual:	via 10-turn potentiometer (" LOC ")						
	REMOTE:	via analogue I/O with $V_{SET/MON} = 0$ to 5 V (" REM ") or interface						
Rate of change of V_O		fixed: $V_{Onom} / 4s$ (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.						
Remote control		via analog I/O (" REM "), RS232 (" RS232 ") or USB (" USB ") interface						
Line voltage AC (V_{INPUT})		100 to 240 V-AC; 50/60 Hz; fused with 2 A-slow						

One channel HV-PS		T1DP 0vv iii
Connectors	HV output: analogue I/O:	SHV-Connector 9-pin male D-Sub connector
Desk case	Size (W/H/D) : (310/90/280, 310 with SHV) mm; Weight: ca. 2,7 kg	
Operating temperature	0 ... +50 °C	
Storage temperature	-20 ... +60 °C	
9-pin male D-Sub connector "analog I/O" on the rear side		
PIN	Name	Description
1	n.c.	
2	V_IMON	Monitor voltage corresponding I_o : $I_o = 0$ to $I_{onom} \Rightarrow V_{2-6} = 0$ to 5 V ($R_i = 10$ k Ω)
3	INH	INHIBIT (TTL level, LOW $\Rightarrow V_o = 0$, [LOW to] HIGH or open $\Rightarrow V_o = V_{SET}$ with ramp)
4	V_ISET	Setting current ($R_{IN} = 10$ k Ω): $V_{4-6} = 0$ to 5 V $\Rightarrow I_o = 0$ to $I_{onom} \pm 1\%$ n.c. $\Rightarrow I_{onom}$ is possible
5	V_Pol	Setting polarity only with option EPU : (TTL level, LOW \Rightarrow negative, HIGH \Rightarrow positive)
6	GND	GND = V_{SET_0V} Signal 0 V (connected to the metal module box)
7	V_VMON	Monitor voltage corresponding V_o : $V_o = 0$ to $V_{onom} \Rightarrow V_{7-6} = 0$ to 5 V ($R_{OUT} = 10$ k Ω)
8	V_VSET	Setting voltage: $V_{8-6} = 0$ to 5 V ($R_{IN} \approx 300$ k Ω) $\Rightarrow V_o = 0$ to $V_{onom} \pm 1\%$
9	V_REF	$V_{9-6} = 5$ V (1 mA) Reference voltage for a external potentiometer (Sliding contact on V_VSET and/or V_ISET)

3. Front panel

