

# T2DP 0vV iii (EPU) High Voltage Desk Top Power Supply

## Operators Manual

### Contents:

1. General information
2. Technical Data
3. Front panel
4. Operation
5. Polarity setting
6. Control via Interface



### 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 T2DP 0vv is a high voltage desk top supply which offer two very stable output voltages 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 reversible
- Output short circuit and overload protected
- Control manually, via analogue I/O and USB Interface

## 2. Technical Data

2 channel HV-PS T2DP 0vv iii (EPU)	0vv iii	005 106	010 106	015 805	020 605	030 405	040 305	050 205	060 155
Output voltage $V_{Onom 1}$ [kV]		0.5	1	1,5	2	3	4	5	6
Output voltage $V_{Onom 2}$ [kV]		0.5	1	1,5	2	3	4	5	6
Output current $I_{Onom 1;2}$		10 mA	10 mA	8 mA	6 mA	4 mA	3 mA	2 mA	1,5 mA
Output polarity	electronically switchable with <b>EPU at <math>V_O = 0</math> !</b> , optional fixed ex works								
Tolerance of $V_{Onom}$	$\pm 1 \%$								
Ripple and noise	typical $< 2 \text{ mV}_{P-P}$ , max. $7 \text{ mV}_{P-P}$								
Stability: $\frac{\Delta V_O}{\Delta V_{INPUT}}$	$< 1 * 10^{-5}$								
$\Delta V_O$ (no load/ load)	$< 5 * 10^{-5}$								
Temperature coefficient	$< 5 * 10^{-5}/K$								
Voltage setting	manual:	via 10-turn potentiometer							
	REMOTE:	via analog I/O with $V_{SET/MON} = 0$ to $5 \text{ V}$ (" <b>REM</b> ") or interface " <b>USB</b> "							
Voltage measurement	resolution:	1 V / 4-digit LCD display							
	accuracy:	$\pm (1\% * V_{Onom})$ (for one year)							
Current setting	manual:	via 10-turn potentiometer							
	REMOTE:	via analog I/O with $V_{SET/MON} = 0$ to $5 \text{ V}$ (" <b>REM</b> ") or interface " <b>USB</b> "							
Current measurement	resolution:	1 $\mu\text{A}$ / 4-digit LCD display							
	accuracy:	$\pm (1\% * I_{Onom})$ (for one year)							
Rate of change of $V_O$	fixed: $V_{Onom} / 4\text{s}$ (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.								
REMOTE control	via analog I/O or USB interface								

<b>2 channel HV-PS</b>		<b>T2DP 0vv iii (EPU)</b>
Line voltage AC ( $V_{INPUT}$ )		100 to 240 V-AC; 50/60 Hz; fused with 2 A-slow
Connectors		HV output: SHV-Connector analogue I/O: 9-pin male D-Sub connector on the rear side USB: USB-B hub on the rear side
Desk case		Size (W/H/D) : (310/90/280) mm; Weight: ca. 3,3 kg
Operating temperature		-20 ... +40 °C
Storage temperature		-20 ... +60 °C
PIN	Name	Description "analog I/O"
1	nc	
2	$V_{I\_MON}$	Monitor voltage corresponding $I_{OUT}$ : $I_{OUT}=0$ to $I_{OUTmax}$ ( $R_i = 10\text{ k}\Omega$ ) $\Rightarrow V_{2-6} = 0$ to 5 V
3	INH	INHIBIT (TTL level, LOW $\Rightarrow V_o = 0$ , [LOW to] HIGH or open $\Rightarrow V_o = V_{SET}$ with ramp)
4	$V_{I\_SET}$	Setting current limit ( $R_{IN} = 10\text{ k}\Omega$ ): $V_{4-6} = 0$ to 5 V $\Rightarrow I_{OUT} = 0$ to $I_{OUTmax}$ n.c. $\Rightarrow I_{OUTmax}$ is possible
5	$V_{POL}$	Setting polarity, only with <b>option EPU</b> : (TTL level, LOW $\Rightarrow$ negative, HIGH $\Rightarrow$ positive)
6	GND	GND = Signal_0 V (connected to the metal module box)
7	$V_{V\_MON}$	Monitor voltage corresponding $V_{OUT}$ : $V_{OUT}=0$ to $V_{OUTmax}$ ( $R_{OUT} = 10\text{ k}\Omega$ ) $\Rightarrow V_{7-6} = 0$ to 5 V
8	$V_{V\_SET}$	Setting voltage: $V_{8-6} = 0$ to 5 V $\Rightarrow V_{OUT} = 0$ to $V_{OUTmax}$ ( $R_{IN} \approx 300\text{ k}\Omega$ )
9	$V_{REF}$	$V_{9-6} = 5\text{ V}$ ( 1 mA) Reference voltage for a external potentiometer (Sliding contact on $V_{V\_SET}$ and/or $V_{I\_SET}$ )

### 3. Front panel

