

Ty<sup>1</sup>DP vv<sup>2</sup> iii<sup>3</sup>

## 1, 2 or 3 Channel High Voltage Desk Top Power Supply

<sup>1</sup>y = number of channels  
<sup>2</sup>v = voltage code  
<sup>3</sup>i = current code

### Operators Manual

#### Contents:

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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 TyDPvviii\_USB\_eng.\_\_\_\_; Version 3.00 as of 09-08-25

## 1. General information

The model TYDP **vvv 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 or 19 inch rack 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

## 2. Technical Data

Ty) <sup>1</sup> DP vvv) <sup>2</sup> iii) <sup>3</sup> EPU	) <sup>2</sup> 005 ) <sup>3</sup> 106	) <sup>2</sup> 010 ) <sup>3</sup> 106	) <sup>2</sup> 020 ) <sup>3</sup> 605	) <sup>2</sup> 030 ) <sup>3</sup> 405	) <sup>2</sup> 040 ) <sup>3</sup> 305	) <sup>2</sup> 050 ) <sup>3</sup> 205	) <sup>2</sup> 060 ) <sup>3</sup> 155
Output voltage V <sub>Onom</sub>	500 V	1 kV	2 kV	3 kV	4 kV	5 kV	6 kV
Output current I <sub>Onom</sub>	10 mA	10 mA	6 mA	4 mA	3 mA	2 mA	1,5 mA
Polarity	positive or negative, switchable manually or electronically at V <sub>OUT</sub> = 0 with <b>option EPU</b>						
Ripple & noise	typ. < 2 mV <sub>P-P</sub> , max. 7 mV <sub>P-P</sub>						
Stability: $\frac{\Delta V_O}{\Delta V_{INPUT}}$	< 1 * 10 <sup>-5</sup>						
$\Delta V_O$ (no load to full load)	< 5 * 10 <sup>-5</sup>						
Temperature coefficient	< 5 * 10 <sup>-5</sup> /K						
Voltage measurement	Resolution:	V <sub>Onom</sub> < 1 kV: 0,1 V ; V <sub>Onom</sub> ≥ 1 kV: 1 V / 4-digit LCD display					
	Accuracy:	± ( 1% * V <sub>Onom</sub> ) (for one year)					
Voltage setting	manual:	via 10-turn potentiometer ("LOC")					
	REMOTE:	via analog I/Omit V <sub>SET/MON</sub> = 0 bis 5 V ("REM") oder USB ("USB")					
Current measurement	Resolution:	I <sub>Onom</sub> ≥ 10 mA: 10 µA ; I <sub>Onom</sub> < 10 mA: 1 µA / 4-digit LCD display					
	Accuracy:	± ( 1% * I <sub>Onom</sub> ) (for one year)					
Current setting	manual:	via 10-turn potentiometer ("LOC")					
	REMOTE:	via analogue I/O with V <sub>SET/MON</sub> = 0 to 5 V ("REM") or USB ("USB")					
Rate of change of V <sub>O</sub>	fixed: V <sub>Onom</sub> / 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.						
Remote control	via analog I/O or USB interface						
Line voltage AC (V <sub>INPUT</sub> )	100 to 240 V-AC; 50/60 Hz; fused with 2 A-slow						

Connectors	HV output: analogue I/O: USB:	SHV-Connector on the rear 9-pin male D-Sub connector on the rear USB-B hub on the rear
Case	19inch - 2U (88.90 mm) / depth: 305mm	
Operating temperature	-20 ... +40 °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_I <sub>MON</sub>	Monitor voltage corresponding I <sub>O</sub> : I <sub>O</sub> = 0 to I <sub>O<sub>nom</sub></sub> ⇒ V <sub>2-6</sub> = 0 to 5 V (R <sub>i</sub> = 10 kΩ)
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>O<sub>nom</sub></sub> ± 1% n.c. ⇒ I <sub>O<sub>nom</sub></sub> is possible
5	V_Pol	Setting polarity only with <b>option EPU</b> : (TTL level, LOW ⇒ negative, HIGH ⇒ positive)
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>O<sub>nom</sub></sub> ⇒ V <sub>7-6</sub> = 0 to 5 V (R <sub>OUT</sub> = 10 kΩ)
8	V_V <sub>SET</sub>	Setting voltage: V <sub>8-6</sub> = 0 to 5 V (R <sub>IN</sub> ≈ 300kΩ) ⇒ V <sub>O</sub> = 0 to V <sub>O<sub>nom</sub></sub> ± 1%
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> )

**Operation see in the attached description**