

## T2EP 300 205x<sup>1</sup>\_2HE

### 19inch 2 Channel High Voltage Desk Top Power Supply

<sup>1</sup>x = p: + 30 kV ; 2 mA

<sup>1</sup>x = n: - 30 kV ; 2 mA

<sup>1</sup>x = pn: + / - 30 kV ; 2 mA

### 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 T2EP 300 205x<sup>1</sup> is a 2 channel high voltage desk top supply which offer very stable output voltages up to 30 kV for use in industry and research. The output is generated by means of a high voltage module of the EPS-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
- Compact and ruggedized enclosure
- Output short circuit and overload protected
- Control manually, via analogue I/O and USB (RS232) interface
- Please use the unit only with HV-Connectors plugged in**

## 2. Technical Data

Two channel HV-PS	T2EP 300 205p_2HE		T2EP 300 205n_2HE		T2EP 300 205pn	
	Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
Output polarity, factory fixed	positive		negative		positive	negative
Output voltage $V_{Onom}$	30 kV $\pm$ 2 % Output impedance 68 k $\Omega$ / 2,2 nF designed for <b>max. 10 arcs/s</b>					
Output current $I_{Onom}$	2 mA (internal limited at 1,02 to 1,04* $I_{OUTnom}$ ) <b>CLD:</b> Load with $I_{OUT}$ = constant according $V_{ISET}$ up to $V_{VSET}$					
Ripple and noise	< 2% * $V_{OUTnom}$					
Stability:	$\Delta V_O$ (no load/ load)		< 2 * 10 <sup>-4</sup>			
Temperature coefficient	< 1 * 10 <sup>-4</sup> /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 interface "USB" ("RS232")				
Current measurement	resolution:	1 $\mu$ 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 interface "USB" ("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 10 short circuits or arcs per second allowed! The integral output current must limited to the max. output current of the module external otherwise. <b>Channel must not be used without HV-Connectors plugged in!</b>					
REMOTE control	via analog I/O or USB (RS232) interface					
Line voltage AC ( $V_{INPUT}$ )	100 to 240 V-AC; 50/60 Hz; fused with 2 A-slow					

Two channel HV-PS		T2EP 300 205p_2HE	T2EP 300 205n_2HE	T2EP 300 205pn
Connectors on the rear side	HV output: analogue I/O: RS232: USB:	HV-plug socket 30kV: LEMO ERA.3Y.425.CLL 9-pin male D-Sub connector per channel 9-pin female D-Sub connector USB connector		
Case		19inch - 2U (88.90 mm) / depth: 305mm		
Operating temperature		0 ... +40 °C		
Storage temperature		-20 ... +60 °C		
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) <b>Please shut off the HV generation with this signal, before the discharge will start of connected capacities !</b>		
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

