high voltage

iseg Spezialelektronik GmbH

Datasheet

High Voltage Power Supply of the device class

HPS (LPS) 2nd Generation, 3 kW, 19“

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Attention

The unit must not be operated with the cover removed to avoid the possibility of lethal shock to the operator!

There are no user maintainable parts inside the power supply!

Unit may only be operated with protective ground conductor connected.

We decline all responsibility for damages and injuries caused by an improper use of the device. It is strongly recommended to read the manual before operation!

All information in this document is subject to change without notice. We take no responsibility for any error in this document. We reserve the right to make changes in the product design without any notification to the users.

Revision: 2013-10-09_datasheet_eng

Technical data

Device class

Table 1: Technical data, device class

Device class HPS (LPS) 2nd Generation, 3 kW, 19“													
Output power P_{nom} [kW]	3												
Output voltage V_{nom} [kV]	1	2	3	4	5	8	12	15	20	30	40	50	60
Output current I_{nom} [mA]	3000	1500	1000	750	600	375	250	200	150	100	75	60	50
HV-connector	SHV					LEMO PSA.3S.CTA.C62	GES 21 HBT			GES HB40		GES B160	
Efficiency	> 92% (V_{in} = 230 V, P_{nom})												
Ripple and noise	Voltage control: $\Delta v < 0.5\% * V_{nom}$ [1)] Current control: $\Delta i < 1\% * I_{nom}$ [1)]												
Stability	$\Delta v < 0.1\% * V_{nom}$ (for 8 h with constant conditions, after ½ h warmup)												
Voltage regulation	$\Delta v < 0.1\% * V_{nom}$ (Δv_{in}, $0 \le I_{OUT} \le I_{nom}$)												
Current regulation	$\Delta i < 0.1\ \% * I_{nom}$ (Δv_{in}, $0 \le V_{OUT} \le V_{nom}$)												
Accuracy	Voltage: $< 1\% * V_{nom}$ for one year current: $< 1\% * I_{nom}$ for one year												
Temperature coefficient	$<2 * 10^{-4}$ /K [1)]												
Control (local, FP)	Optional front panel operation via rotary encoders and displays (LCD)												
Remote control (all interfaces are electrically isolated)	AIO	Analogue signals	Level 0 V – 5 V										
		Digital signals	Low level 0 V - 4 V High level 8 V - 15 V or open										
	USB	Via USB Interface											
	SPS	Optional, separation of analogue (AIO) und digital (DIO) output signals[2)]											
	RS232	Optional, via RS232 Interface[2)]											
	CAN	Optional, via CAN Interface[2)]											
	IEEE	Optional, via IEEE Interface[2)]											
	Ethernet	Optional, via Ethernet Interface[2)]											
Supply	V_{in} = 170 V – 264 V AC (PFC) I_{in} < 20 A (V_{in} = 170 V, P_{nom}) Line frequency 47 Hz < f_l < 63 Hz Internally fused with circuit breaker 2 x 20 A with fast characteristic Inrush current internally limited to ca. 20 A												
Cooling	Forced cooling with integrated fans (≤ 180 m³/h)												
Monitoring	ARC, single phase mains voltage, auxiliary voltage, over voltage, temperature, Interlock												
ARC-Management with adjustable parameters	ARC-Wait, ARC-Number, ARC-Time, ARC-Ramp-Time												

Table 2: Continuation: technical data, device class

Device class HPS (LPS) 2nd Generation, 3 kW, 19“		
Working conditions		Temperature: 0°C to 50 °C Humidity: 20% to 90%, no condensation
Working conditions		Temperature: -25°C to 80 °C Humidity: 20% to 90%, no condensation
Electromagnetic compatibility	Emission	EN 55011 (curve B)
	Immunity	EN 61000 4-2, EN 61000 4-3, EN 61000 4-4, EN 61000 4-8
Safety standard		EN 61010-1 (VDE 0411)
Dimensions, Weight		1 kV ≤ V_{nom} ≤ 20 kV: 2U –19“ depth: 410 mm, ca. 15 kg 30 kV ≤ V_{nom} ≤ 60 kV: 3U –19“ depth: 410 mm, ca. 20 kg
Series LPS		Very low output voltage overshoot
HV outputs		Standard 1 HV output [1]
Electrically isolated return of the high voltage		Potential difference between return conductor and protective ground up to ± 60 V [1]

[1] other values on request

[2] not all interfaces can be combined

Electrical wiring of the high voltage output

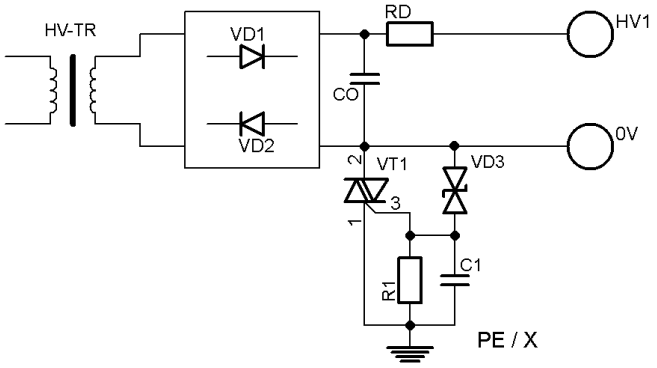

Figure 0.1: Electrical wiring of the high voltage output

Dimensions

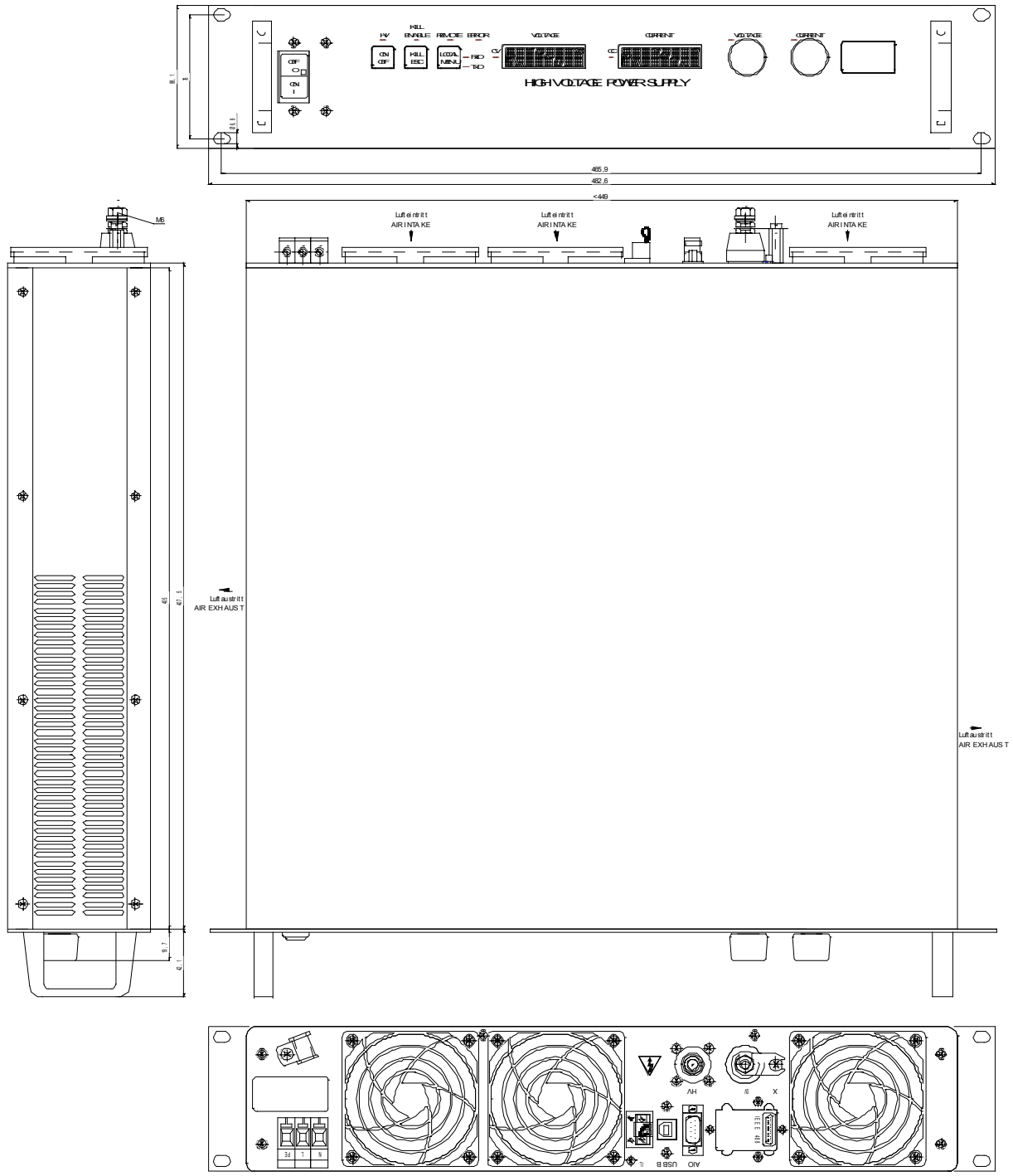

Figure 0.2: Dimensioned drawing (in mm), height of the device 2U