

DIGITAL CONTROLLABLE AC/DC HIGH VOLTAGE POWER SUPPLIES

DIGITAL STEUERBARE AC/DC HOCHSPANNUNGS-NETZGERÄTE

- ▶ 300 W - 10 kW / 1kV - 100 kV versions
- ▶ 19" rack mountable or compact box version
- ▶ best control characteristics
- ▶ multiple interface options
- ▶ capacitor charger option (optional CLD)
- ▶ ultrafast ARC management (optional ARC/ARCpro)
- ▶ very low ripple and noise, very low EMI
- ▶ parallel operation for power increase

- ▶ 300 W - 10 kW / 1kV - 100 kV Versionen
- ▶ 19"-Rack- oder Kompaktversionen
- ▶ hervorragende Regelcharakteristik
- ▶ vielfältige Schnittstellen-Optionen
- ▶ Kondensatorlader (optional CLD)
- ▶ ultraschnelles ARC-Management (optional ARC/ARCpro)
- ▶ sehr geringe Restwelligkeit/Rauschen und gute EMV
- ▶ Parallelbetrieb zur Leistungserhöhung



HPS devices are digital controlled AC driven high voltage power supplies with high power density at best output characteristics. The processor controlled supplies can flexibly be adapted to any kind of application by configuring many options. PWM controlled output parameters, small ripple and noise and stored energy, up to 93% efficiency and almost loss free switching of semiconductors makes HPS devices the most advanced AC/DC HV power supply for industrial and research applications.

Geräte der HPS-Serie sind digital gesteuerte, netzgespeiste Hochspannungsversorgungen mit hoher Leistungsdichte und bester Leistungscharakteristik. Die prozessorgesteuerte Versorgung kann durch Optionen flexibel an eine Vielzahl von Anwendungen angepasst werden. PWM gesteuerte Ausgangsparameter, geringe Restwelligkeit und gespeicherte Energie, bis zu 93% Wirkungsgrad und fast verlustfreie Schaltung der Leistungshalbleiter machen HPS-Geräte zu den besten Hochspannungsnetzversorgungen für industrielle und Forschungsanwendungen.

SPECIFICATIONS / SPEZIFIKATION

	HPS COMPACT	HPS 300 W	HPS 800 W	HPS 1.5 kW	HPS 3 kW	HPS 6 kW	HPS 10 kW
Power	350 W	300 W	800 W	1,500 W	3,000 W	6,000 W	10,000 W
Polarity	factory fixed, positive or negative						
Ripple and noise [f > 10 Hz]	$< 2 \bullet 10^{-3} \bullet V_{nom}$	$< 1 \bullet 10^{-4} \bullet V_{nom}$ [V _{nom} ≤ 8 kV]		$< 3 \bullet 10^{-3} \bullet V_{nom}^{**}$	$< 5 \bullet 10^{-3} \bullet V_{nom}^{**}$	$< 9 \bullet 10^{-3} \bullet V_{nom}^{**}$	
		$< 5 \bullet 10^{-4} \bullet V_{nom}$ [V _{nom} > 8 kV]					
Stability	0.02 %	0.02 %*		0.05 %*		0.05 %*	
Voltage regulation $[\Delta V_{reg} / \Delta V_{in}]$	0.02 % [V _{reg} ≥ 5 V]	0.01 % [V _{reg} ≥ 5 V]		0.01 % [V _{reg} ≥ 5 V]		0.01 % [V _{reg} ≥ 5 V]	
Temperatur coefficient	$< 2 \bullet 10^{-4} / K$						
Supply voltage	85 - 264 VAC with PFC			170 VAC - 264 VAC with PFC		3 x 400 VAC ± 10%	
Efficiency	up to 85%			up to 93%		up to 93%	
Switching frequency	30 - 70 kHz			80 - 130 kHz	70 - 90 kHz	60 - 80 kHz	
Set / monitor voltage	0 - 5 V opt. 0 - 10 V						
Protection	overload, ARC and short circuit protected, INTERLOCK, INHIBIT, overvoltage/overtemp protection						
ARC Management	ARC			ARCpro		ARCpro	
Interfaces	USB, CAN, opt.: IEEE488.2, Ethernet, RS232, AIO isolated			USB, AIO isolated, opt: IEEE 488.2, Ethernet, RS232, CAN, SPS (0-10V)			
Filament supply	not available			optional		optional	
Case	metal box	19" rack mountable			19" rack mountable		
Dimensions (L/W/H)	280/254/107 mm	410 mm / 19" / 1U			410-550 mm / 19" / 2-4U		500 mm/ 19" / 4U
(* for 8h, after 0.5h warmup (**) option VLN: $< 5 \bullet 10^{-4} \bullet V_{nom}$ (not available for all configurations)							

CONFIGURATIONS / KONFIGURATIONEN				
MODEL	V _{nom}	I _{nom}	HEIGHT	HV CONNECTOR
HPS COMPACT				
HPx 10 357 y	1 kV	350 mA	107 mm	GES HB11
HPx 20 177 y	2 kV	175 mA	107 mm	GES HB11
HPx 30 127 y	3 kV	120 mA	107 mm	GES HB11
HPx 50 706 y	5 kV	70 mA	107 mm	GES HB11
HPx 80 456 y	8 kV	45 mA	107 mm	GES HB11
HPx 100 356 y	10 kV	35 mA	107 mm	GES HB11
HPx 150 236 y	15 kV	23 mA	107 mm	GES HB31
HPx 200 186 y	20 kV	18 mA	107 mm	GES HB31
HPx 250 146 y	25 kV	14 mA	107 mm	GES HB31
HPx 300 126 y	30 kV	12 mA	107 mm	GES HB31
HPx 400 905 y	40 kV	9 mA	107 mm	special HV-connector
HPx 500 705 y	50 kV	7 mA	107 mm	special HV-connector
HPx 600 605 y	60 kV	6 mA	107 mm	special HV-connector
HPx 700 505 y	70 kV	5 mA	107 mm	special HV-connector
HPS 19" - 300 W				
HPx 10 307 y	1 kV	300 mA	1U	SHV
HPx 20 157 y	2 kV	150 mA	1U	SHV
HPx 30 107 y	3 kV	100 mA	1U	SHV
HPx 40 756 y	4 kV	75 mA	1U	SHV
HPx 60 506 y	6 kV	50 mA	1U	SHV
HPx 80 356 y	8 kV	35 mA	1U	SHV
HPx 120 256 y	12 kV	25 mA	1U	LEMO ERA1Y416.CL
HPx 150 206 y	15 kV	20 mA	1U	LEMO ERA1Y416.CL
HPx 200 156 y	20 kV	15 mA	1U	LEMO ERA3Y425.CL
HPx 300 106 y	30 kV	10 mA	1U	LEMO ERA3Y425.CL
HPS 19" - 800 W				
HPx 10 807 y	1 kV	800 mA	1U	SHV
HPx 20 407 y	2 kV	400 mA	1U	SHV
HPx 30 257 y	3 kV	250 mA	1U	SHV
HPx 40 207 y	4 kV	200 mA	1U	SHV
HPx 60 137 y	6 kV	130 mA	1U	SHV
HPx 80 107 y	8 kV	100 mA	1U	SHV
HPx 120 656 y	12 kV	65 mA	1U	LEMO ERA1Y416.CL
HPx 150 506 y	15 kV	50 mA	1U	LEMO ERA1Y416.CL
HPS 19" - 1.5 kW				
HPx 10 158 152	1 kV	1.5 A	2U	SHV
HPx 20 757 152	2 kV	750 mA	2U	SHV
NEW HPx 30 507 152	3 kV	500 mA	2U	SHV
HPx 40 387 152	4 kV	380 mA	2U	SHV
HPx 80 197 152	8 kV	190 mA	2U	LEMO PSA.3S.CTA.C62
HPx 100 157 152	10 kV	150 mA	2U	LEMO PSA.3S.CTA.C62
HPx 120 137 152	12 kV	125 mA	2U	GES HB21
HPx 150 107 152	15 kV	100 mA	2U	GES HB21
HPx 200 756 152	20 kV	75 mA	2U	GES HB21
HPx 300 506 152	30 kV	50 mA	3U	GES HB40
HPx 400 386 152	40 kV	38 mA	3U	GES HB40

CONFIGURATIONS / KONFIGURATIONEN				
MODEL	V _{nom}	I _{nom}	HEIGHT/DEPTH	HV CONNECTOR
HPx 500 306 152	50 kV	30 mA	3U 410 mm	GES B160
HPx 600 256 152	60 kV	25 mA	3U 410 mm	GES B160
NEW HPx 800 206 152	80 kV	20 mA	4U 550 mm	GES B1100
NEW HPx A00 156 152	100 kV	15 mA	4U 550 mm	GES B1100
HPS 19" - 3 kW				
HPx 10 308 302	1 kV	3 A	2U 410 mm	SHV
HPx 20 158 302	2 kV	1.5 A	2U 410 mm	SHV
NEW HPx 30 108 302	3 kV	1 A	2U 410 mm	SHV
HPx 40 757 302	4 kV	750 mA	2U 410 mm	SHV
HPx 80 387 302	8 kV	375 mA	2U 410 mm	LEMO PSA.3S.CTA.C62
HPx 120 257 302	12 kV	250 mA	2U 410 mm	GES HB21
HPx 150 207 302	15 kV	200 mA	2U 410 mm	GES HB21
HPx 200 157 302	20 kV	150 mA	2U 410 mm	GES HB21
HPx 300 107 302	30 kV	100 mA	3U 410 mm	GES HB40
HPx 400 756 302	40 kV	75 mA	3U 410 mm	GES HB40
HPx 500 606 302	50 kV	60 mA	3U 410 mm	GES B160
HPx 600 506 302	60 kV	50 mA	3U 410 mm	GES B160
NEW HPx 800 386 302	80 kV	38 mA	4U 550 mm	GES B1100
NEW HPx A00 306 302	100 kV	30 mA	4U 550 mm	GES B1100
HPS 19" - 6 kW				
HPx 10 608 602	1 kV	6 A	4U 500 mm	GES HB11
HPx 20 308 602	2 kV	3 A	4U 500 mm	LEMO PSA.3S.CTA.C62
NEW HPx 30 208 602	3 kV	2 A	4U 500 mm	LEMO PSA.3S.CTA.C62
NEW HPx 40 158 602	4 kV	1.5 A	4U 500 mm	LEMO PSA.3S.CTA.C62
HPx 50 128 602	5 kV	1.2 A	4U 500 mm	LEMO PSA.3S.CTA.C62
NEW HPx 60 108 602	6 kV	1 A	4U 500 mm	LEMO PSA.3S.CTA.C62
NEW HPx 80 757 602	8 kV	750 mA	4U 500 mm	LEMO PSA.3S.CTA.C62
HPx 100 607 602	10 kV	600 mA	4U 500 mm	LEMO PSA.3S.CTA.C62
HPx 200 307 602	20 kV	300 mA	4U 500 mm	GES HB21
HPS 19" - 10 kW				
HPx 10 109 103	1 kV	10 A	4U 500 mm	GES HB11
HPx 20 508 103	2 kV	5 A	4U 500 mm	LEMO PSA.3S.CTA.C62
NEW HPx 30 348 103	3 kV	3.4 A	4U 500 mm	LEMO PSA.3S.CTA.C62
NEW HPx 40 258 103	4 kV	2.5 A	4U 500 mm	LEMO PSA.3S.CTA.C62
HPx 50 208 103	5 kV	2 A	4U 500 mm	LEMO PSA.3S.CTA.C62
NEW HPx 60 178 103	6 kV	1.7 A	4U 500 mm	LEMO PSA.3S.CTA.C62
NEW HPx 80 138 103	8 kV	1.3 A	4U 500 mm	LEMO PSA.3S.CTA.C62
HPx 100 108 103	10 kV	1 A	4U 500 mm	LEMO PSA.3S.CTA.C62
HPx 200 507 103	20 kV	500 mA	4U 500 mm	GES HB21

ORDER & OPTIONS / BESTELLINFORMATIONEN		
OPTION	ORDER INFO	EXAMPLE
Polarity	positive: x = p , negative: x = n	HPp 10 357 05
Capacitor charger	CLD	
ARC management	ARC	
interfaces	Ethernet: ETH IEEE 488: IEE RS232: RS2	
HPS COMPACT / 300 W / 800 W only options		
Set / monitor voltage	0-5 V (standard): y = 05 , 0-10 V (optional): y = 10	HPp 10 357 10
AIO isolated	AIO	
Note: other product configurations and customizing on request		

HPS 1.5 kW / 3 kW / 6 kW / 10 kW only options	
Front panel operation	FP
interfaces	CAN SPS
Very low noise: $< 5 \cdot 10^{-4} \cdot V_{nom}$ (*not available for all configurations)	VLN
ARC current limitation	ACL
Two HV output connectors	2HC
Integrated filament supply	FCS
Integrated magnet supply	MCS
Extend operating area	EOA