

HSE03201LIRC

DIN Rail

Made in Germany

320 Watts Power Supply -20...+70°C
115/230Vac Input Voltage, Active Low Inrush

Short Specification:

- Metal housing
- 91% efficiency typ.
- -20°C...+60°C full output power
- Free air convection
- Galvanic insulated
- Continuous short circuit protected
- Overload & low voltage protected
- Soft start & auto-recovery
- Hold up time >30ms
- Minimum load = 0A
- EMI/EMS EN61000-6-2,3, EN55022 class B
- cUL60950 EN60950-1 EN60204-1
- Series & parallel operation
- DIN Rail 35mm
- Screw terminals AWG20...AWG9
- 24 hours burn in test
- High reliability, shock & vibration resistant
- Active Low Inrush Current Limiter

Smart start-up with critical loads:

- motor drives
- capacitive loads
- DC-DC-converters

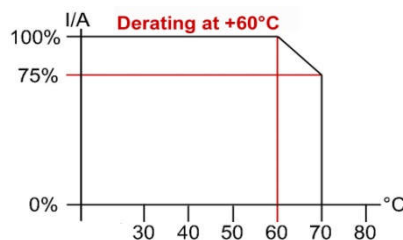


Single-Output: 12V, 15V, 24V, 36V, 48V, 60V



AC Input	85...132Vac / 184..264Vac 47...63Hz , 250...375Vdc					
Input Rating	115Vac <6.2A 230Vac <2.9A					
Rated DC Voltage	12V	15V	24V	36V	48V	60V
Rated DC Current	18.0A	17.0A	13.5A	8.9A	6.7A	5.4A
Power Boost ≤60 Seconds	21.6A	20.4A	16.2A	10.7A	8.0A	6.5A
Ripple [mVpp] (230Vac/20MHz)	30	30	20	30	50	50
Output adj. Range [V]	11,4..14,4V	14,2..18,0V	22,5..28,8V	34,2..43,2V	45,6..57,6V	57,0..72,0V
Stability Load switch 0-100%	± 0,3%	± 0,3%	± 0,3%	± 0,5%	± 0,5%	± 0,5%
Order code: HSE03201.Uout+TLIRC Example: HSE03201.24TLIRC						

Tolerance	± 1%
Load regulation	< ± 0.5% 10-100%, 100-10%
Minimum Load	0 A
Efficiency	91% typical
Load Protection	1,2x I _{rated} ,auto recovery
Voltage Protection	140% of U _{out} , auto recovery
Short Circuit Protection	Continuous
Temperature Control	Yes
Hold Up Time	> 30ms 230Vac
Inrush Current (Active Limiter)	< 15A _{peak} (230Vac)
Softstart	20ms typical
Convection	Natural convection
Ambient Temperature	- 20°C...+70°C
Storage Temperature	- 40°C...+85°C
EMI	EN55022 class B
EMS	EN61000-6-2,3
Safety	EN60950-1, EN60204-1
Safety class 1(A)	VDE0805, VDE0100
Air & Surface Leakage Paths	> 8mm
Input/Output	Galvanic insulated 3000Vac
Power Good Relay (opener)	<48Vdc/500mA (galv. insulated)
MTBF EN61709	500000h
MTTF EN61709m SN29500	157102h @ 40°C 24/7 85% load
Clima/Dirt/Hight/Humidity	3k3, KI.2, 3000m NN, 90% Hum.
Dimensions (HxWxD)	124x120x99,5mm
Weight	1200g
Screw Connectors (AC & DC)	AWG20...AWG9



Terminal Connects:

AC
1 = N
2 = L
3 = GND

DC
1 = DC +
2 = DC +
3 = DC -
4 = DC -

A Power Good
Relay

Screw terminal order codes for SK1 & SK2:
(each package = 10 pcs)
Art.No.: 3520037
(2 pins for relay)

Conception:

The HSE power supply series realizes very high power efficiency in a space-saving housing. This design enables Green Power applications and allows free air convection. Latest generation electrical devices relate to the high reliability of all Camtec products. The Camtec philosophy is, to employ 125°C low ESR ultra long life capacitors where expedient to achieve a superior lifetime of our products. The used screw terminals allow easy to wire and smooth service.

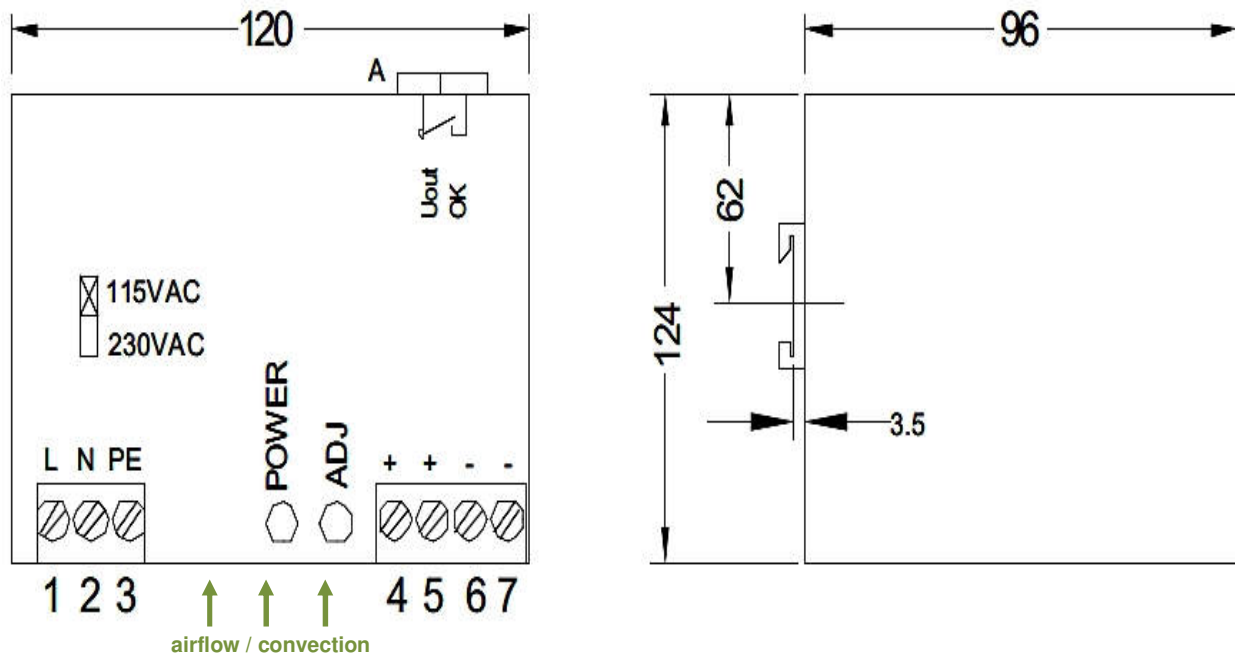
Parallel and Serial Operation:

Camtec power supplies of the same model and the same output voltage can be either used parallel or in serial. The assembling of external parts is usually not recommended. Make sure that the output voltage of each connected unit is ±1% equal. We recommend connecting the DC-outputs to a neutral point or a power bar. Follow the safety norms of dangerous dc-voltages. Most of the HSE power supplies allow selecting a parallel operation mode with a switcher B (not HSE01201 & HSE03201). The parallel operation select tilts the C/V-chart a little bit. In result the switching is softer. The power sharing between the units is more accurate. The HSE models can be used floating until 300Vdc (not HSE01201 & HSE03201)

UI-Chart, overload and temperature control characteristic

The HSE models base on a typical resonance forward converter. The devices provide an ideal vertically C/V-chart with no foldback. Thus the converter is ideal for complex loads and DC-drives. Consciously we resigned an excessive Powerboost that mostly occurs in less exact working control circuits. The advantage is, that the power supply delivers its energy always controlled and constant to the load. Even with a faulty operation of the power supply the loads never expose to high risk.

The **temperature control** follows the C/V-chart. The power will be reduced over the voltage and the current remains constant (CC-mode). If the power supply really overheats the output voltage will be shot down. When the temperature recovers the unit automatically recovers and restarts into normal operation. As a standard the **power good relay** allows to control the power supply.



Coating Option

We offer the HSEUreg-series with optional coating. It is to be used in e.g. dusty, dirty, high humidity, or in awaiting quick temperature changes. Short circuit and corrosion at print board lines and at solder points can be prevented. The coat itself is a transparent acrylic resin. It is procured with a robotics varnishing machine. Peters SL 1306 N-FLZ (transparent) IEC60216-1 2001, IPC-CC-830B, UL listed as permanent coating FileNo.: E80315 , UL94V-0

Ordering Information: ad extension C to the complete type number, e.g.: HSE03201.24TLIRCC, HSE04801.24TC, ...


Safety Instructions: Please read all warnings and advices carefully before installing or operating the power supply. Retain this operation manual always ready to hand. The device must be installed by specialist staff only.

Installation:

- 1.) The device is designed for systems fulfilling the safety norms of dangerous voltages/energy and fire prevention
- 2.) Installation is restricted to specialists only, make sure that the AC wire system is free of voltage
- 3.) Opening the unit, making any modifications to it, dismantling any screws from it, operating the HPW out of specification and/or using it in appropriate area will inevitably result in losing manufactureres guarantee; we decline taking any responsibility for risk of damages caused to someones health or to any installed system.
- 4.) Attention: The power supply has an internal input fuse. It is necessary to wire an automatic circuit braker (MCB) to the line. We suggest to use a 16A-type with B-characteristic. It is verboten to operate the power supply without protective earth wired. It essential to install a line switch before the device.

Warnings:

Disregard these warnings can cause fire, electric shock, serious accident and death.

1. **Never operate the device without Protective Earth Conductor**
2. **Before connecting the unit to the AC wire system make all wires free of voltage and assure accidently switch on**
3. **Allow neat and professional cabling**
4. **Never open nor try to repair the power supply by yourself. Inside are dangerous voltages that can cause electric shock hazard.**
5. **Avoid metal pieces or other conductive material to fall into the device**
6. **Do not operate the unit under damp or wet conditions**
7. **It is verboten to operate the unit under Ex conditions or in Ex-Area** 

All parameters base on 15 minutes run-in @ full load / 25°C / 230Vac 50/60Hz, as otherwise stated.