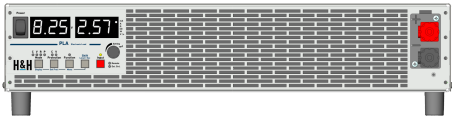


Datasheet Series PLA

| | | |
|---------------------------------------|-----------------------------|--|
| Model | PLA1212 |  |
| Order no. | 22-014-000-01 | |
| Basic operating modes | CC, CV, CR, CP | |
| Standard interfaces | - | |
| Max. input voltage Vmax | 120 V | |
| Min. input voltage Vmin ¹⁾ | 1.2 V | |
| Max. load current Imax | 60 A | |
| Continuous power | 1200 W | |
| Short-time power ²⁾ | 1500 W | |
| Voltage setting | 0 ... 120 V | |
| Current setting | 0 ... 60 A | |
| Resistance setting | 0.03333 Ohm ... 66.6667 Ohm | |
| Power setting ³⁾ | 0 ... 1500 W | |
| Rise and fall time fast ⁴⁾ | 40 µs | |
| Load terminals (front) ⁵⁾ | BPK4-60L | |
| Load terminals (rear) ⁶⁾ | BPK4-60L | |
| Power consumption | 70 VA | |
| Noise max. ca. ⁷⁾ | 61 dB(A) | |
| Weight ca. | 8.5 kg | |
| Housing / 3D model ⁸⁾ | 19" - 2 U / PLA_M11 | |
| Width x Height x Depth | 440 x 106 x 314 mm | |

1. Minimum input voltage for maximum static load current.
2. Level and duration of the peak power depend on the previous power.
3. The setting range extends max. to the possible shorttime power.
4. Rise and fall times are defined of 10 ... 90 % and 90 ... 10 % of the maximum current (CC mode, fast regulation speed, tolerance ± 20 %). Rise and fall time at setting "slow": approx. 500 µs.
5. PK4-30L: Binding posts for 4 mm laboratory jack and stripped wires with diameter up to 4 mm, max. 30 A
 BPK4-30L: Touch-protected binding posts for 4 mm laboratory jacks and stripped wires with diameter up to 4 mm, max. 30 A
 BPK4-60L: Touch-protected binding posts for 4 mm laboratory jacks and stripped wires with diameter up to 6 mm, max. 60 A
 SBU4-32: Safety sockets touch-protected for 4 mm laboratory jacks, max. 32 A
 FKS20/4-SM8: Flat copper bars 20 x 4 mm vertical with hole for screw M8
 Models with copper bars (FKS) are delivered with safety covers.
6. PK4-30L: Binding posts for 4 mm laboratory jack and stripped wires with diameter up to 4 mm, max. 30 A
 BPK4-30L: Touch-protected binding posts for 4 mm laboratory jacks and stripped wires with diameter up to 4 mm, max. 30 A
 BPK4-60L: Touch-protected binding posts for 4 mm laboratory jacks and stripped wires with diameter up to 6 mm, max. 60 A
 SBU4-32: Safety sockets touch-protected for 4 mm laboratory jacks, max. 32 A
 FKS20/4-SM8: Flat copper bars 20 x 4 mm vertical with hole for screw M8
 Models with copper bars (FKS) are delivered with safety covers.

Datasheet Series PLA

7. Measured on the front from distance of 1 m.
8. Device height incl. equipment feet. Maximum width and depth incl. handle. Installation depth without connection cable. 1 U = 44.45 mm.

| | | |
|--|---|-------------------------------|
| Operating modes | | |
| Basic operating modes | CC, CV, CR, CP | |
| Combined operating modes | CC+CV, CP+CV, CR+CV, CP+CC, CR+CC, CV+CC | |
| Accuracy of setting | | |
| | of setting value | of corresponding range |
| Voltage | ±0.1 % | ±0.05 % |
| Current | ±0.2 % | ±0.05 % |
| Resistance (at V > 5 % of voltage range) | ±1.4 % | ±0.3 % of current range |
| Power (at V and I > 10 % of range) (at V or I 5 ... 10 % of range) | ±0.7 % ±2 % | |
| Resolution | 12 bits | |
| Accuracy of adjustable protections | | |
| | of setting value | of corresponding range |
| Overcurrent protection | ±0.5 % | ±0.05 % |
| Undervoltage protection | ±0.3 % | ±0.02 % |
| Resolution | 12 bits | |
| Accuracy of measurement | | |
| | of measured (actual) value | of corresponding range |
| Voltage | ±0.1 % | ±0.05 % |
| Current | ±0.2 % | ±0.05 % |
| External control voltage 0 ... 10 V | ±0.2 % | ±0.1 % |
| Resistance | is calculated from voltage and current | |
| Power | is calculated from voltage and current | |
| Resolution | 16 bits | |
| Sampling rate | 100 µs, not triggerable | |
| Accuracy of displays (user interface) | | |
| Display user interface | accuracy of each measurement, ±1 digit of the display value | |
| Resolution | see display resolution page 22 | |
| Dynamic function (LIST) | | |
| Number of load levels | max. 100, with corresponding ramp, dwell and sampling times | |
| | min. | max. |
| Dwell time | 1 ms | 100 s |
| Ramp time | 0 s | 100 s |
| Resolution | 1 ms | |
| Accuracy of setting times | ±0.02 % | |
| Sampling times | 1 ms ... 100 s, resolution 1 ms | |
| Data acquisition | | |
| | of measured (actual) value | of corresponding range |
| Accuracy voltage | ±0.1 % | ±0.05 % ±1 LSB |
| Accuracy current | ±0.2 % | ±0.05 % ±1 LSB |
| Resolution | 16 bits | |
| to external memory | | |
| Sampling rate | 0.1 ... 30 s, 0.1 s resolution | |
| Measurement data | time stamp, voltage, current | |
| Number of measurement points | limited by flash drive memory size | |
| File format | .csv | |

| | | |
|---|--|-----------------------------------|
| to internal memory | | |
| Sampling rate | 1 ms ... 100 s, 1 ms resolution | |
| Measurement data | time stamp, voltage, current | |
| Number of measurement points | max. 100 | |
| Settings memories | | |
| Number of user settings | 10, selectable (incl. programmed list) | |
| I/O port: outputs and inputs | | |
| Status and control outputs | status load input (on/off, low active) overload (OV, OCP, OPP, OTP, low active) | |
| Output level | 5 V | |
| Control inputs | load input (on/off, low active) control input (activates I/O port, low active) | |
| Input level | 3 ... 30 V | |
| I/O port: accuracy of analog control 0 ... 10 V | | |
| | of the setting value | of the corresponding range |
| Voltage | ±0.2 % | ±0.05 % |
| Current | ±0.2 % | ±0.05 % |
| Resistance (at V > 5 % of voltage range) | ±1.6 % | ±0.4 % of current range |
| Power (at V and I > 30 % of the corresponding range) | ±0.55 % | ±0.2 % |
| Power at V and I > 5 % and < 30 % of the corresponding range | ±0.9 % | ±0.35 % |
| | input resistance of analog inputs >10 kΩ | |
| I/O port: accuracy of analog monitor outputs 0 ... 10 V | | |
| | of analog signal of real value | offset voltage |
| Voltage | ±0.1 % | ±15 mV |
| Current | ±0.2 % | ±15 mV |
| | minimum load 2 kΩ | |
| I/O port: permissible voltages | | |
| Vin-io (GND - neg. load input) | max. 2 V ¹⁾ | |
| VioPE (GND - PE) | max. 125 V ¹⁾ | |

The specified accuracies refer to an ambient temperature of 23 ±5 °C. The specified accuracies are valid when the sense lines (if available) are connected and when the unit is connected to undisturbed voltages (ripple and noise < 0.1 %). At voltages with higher disturbance values the accuracy can change for the worse.

1. positive/negative DC voltage or RMS value of a sinusoidal AC voltage

Technical Data

| Input | |
|--|---|
| Input resistance | >50 kΩ when load input is off diode function at reverse polarity up to nominal current |
| Input capacity | see model overview |
| Parallel operation | up to 5 devices in Master-Slave operation |
| Maximum input voltage V _{max} | see model overview |
| Minimum input voltage V _{min} | see model overview |
| Input: permissible voltages | |
| V _{in} -PE (neg. load input - PE) | max. 125 V ¹⁾ |
| V _{in} +PE (pos. load input - PE) | V _{max} + max. 125 V ¹⁾ |
| Power | |
| Continuous power | see model overview (at T _a = 21 °C) |
| Derating | -1.2 %/°C for T _a > 21 °C |
| Overload capacity | see model overview The possible short-time power depends on the temperature of the device and with that on the normal rating taken before. |
| Protection and monitoring | |
| Protective devices | overcurrent overpower overtemperature |
| Monitoring | overvoltage indication reverse polarity indication undervoltage display (if the input voltage is too low for the set current) |
| Terminals | |
| Load input | see model overview |
| Sense | at I/O port, only at models up to 120 V |
| Operating conditions | |
| Operating temperature | 5 ... 40 °C |
| Stock temperature | -25 ... 65 °C |
| Max. operating height | 2000 m above sea level |
| Pollution degree | 2 |
| Max. humidity | 80 % at 31 °C, linear decreasing to 50 % at 40 °C |
| Min. distance rear panel - wall or other objects | 70 cm |
| Cooling | temperature-controlled air cooling |
| Noise | see model overview |
| Mains voltage with option PLA18 | 1/N/PE AC 85 ... 264 V 50 ... 60 Hz DC 10 ... 18 V, max. 4 A, reverse polarity protected |
| Mains cable | length max. 3 m cross-section of mains leads min. 1 mm ² |
| Power consumption | see model overview |

| Housing | |
|---|---|
| Color | |
| Front panel | RAL7035 (light grey) |
| Rear panel | stainless steel |
| Side panels, top | RAL7037 (dusty grey) |
| Dimensions, weight | see model overview |
| Safety and EMC | |
| Protection class | 1 |
| Measuring category | 0 (CAT I according to EN 61010:2004) |
| Electrical safety | DIN EN 61010-1 DIN EN 61010-2-030 |
| EMV, CE marking | DIN EN 55011 DIN EN 61326-1 DIN EN 61000-3-2 DIN EN 61000-3-3 |
| Standard interfaces | |
| Data interfaces | - |
| I/O interface | standard I/O port (not isolated) |
| Available options | |
| Data interfaces PLA01 PLA02 PLA03 | USB, RS-232, Ethernet GPIB (for models up from 400 W, requires PLA01) CAN (requires PLA01) |
| Mechanical options PLA08 PLA10 PLA11 PLA12 PLA13 PLA14 PLA15 PLA16 PLA17 | safety cover for copper bars 19" installation kit for 1 device with ½ 19"; 1 U 19" installation kit for 2 devices with ½ 19"; 1 U 19" installation kit for 1 device with ½ 19"; 2 U 19" installation kit for 2 devices with ½ 19"; 2 U 19" installation kit for 1 device with ½ 19"; 2 U and 1 device with ½ 19"; 1 U 19" installation kit for 1 device with ½ 19"; 2 U and 2 devices with ½ 19"; 1 U carrying handle for 1 device with ½ 19"; 1 or 2 U 19" installation kit for 1 device with 19"; 2 U |
| DC-Versorgung PLA18 | 12 V DC supply (10 ... 18 V) |
| Calibration, warranty | |
| FCC-PLAxx | Factory Calibration Certificate, twice free of charge |
| Warranty | 2 years |

1. positive/negative DC voltage or RMS value of a sinusoidal AC voltage

Technical data of production series A, rev. 5. Subject to technical changes without notice.