

DATASHEET 1310-0812

Operating Modes Setting

Current:	Voltage:	Resistance:	Power:
0 ... 20 A	0 ... 40 V	0.1 Ω ... 66.7 Ω	0 ... 533 W
0 ... 60 A	0 ... 120 V	0.03 Ω ... 22.2 Ω	0 ... 1600 W



Accuracy of the Manual Setting, without Presetting:

	of setting	of corresponding range
Voltage	±0.2%	±0.05%
Current	±0.2%	±0.05%

Accuracy of Manual Setting with Presetting:

	of setting	of corresponding range
Voltage	±0.6%	±0.05%
Current	±0.6%	±0.05%
Resistance	±1.4%	±0.3% of current range
Power	±1.4%	±0.5%
Current Limitation	±1.4%	±0.3%
Trigger Voltage	±1.4%	±0.3%
Time Setting	±1.4%	±0.5% of B1 or B2
Time ranges for internal modulator		
	B1	100ms
	B2	1000ms

Accuracy of Display:

	of measured value (real value)	of corresponding range
Voltage	±0.2%	±0.05%
Current	±0.2%	±0.05%

Accuracy of Analog Programming:

0 ... 5V / 0 ... 10V for Current, Voltage, Power

	of setting	of corresponding range
Voltage	±0.2%	±0.1%
Current	±0.2%	±0.1%
Power	±2%	±0.5%
Current Limitation *	±1%	±0.4%

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Trigger Voltage * **±1%** **±0.4%**

* only when option ZS08 is installed
 Input impedance of the analog inputs: > 10kΩ
 GND max. ±2V against negative load input ¹⁾

**Accuracy of Analog Monitor Outputs:
 0 ... 10V for Current, Voltage, Power ²⁾**

	of the analog signal of the real value	offset voltage
Voltage	±0.2%	±15mV
Current	±0.2%	±15mV
Power	±2%	±30mV

GND max. ±2V against negative load input ¹⁾
 Loading capacity minimum 2kΩ

**Accuracy of Setting
 Programming via Data Interface:**

	of setting	of corresponding range
Voltage	±0.2%	±0.05%
Current	±0.2%	±0.05%
Resistance	±1%	±3% of current range
Power	±1%	±0.5%
Current Limitation	±1%	±0.3%
Trigger Voltage	±1%	±0.3%
Resolution Setting	16 bit	

Accuracy of Measurement, Reading via Data Interface:

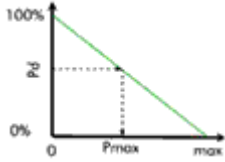
	of measured value (real value)	of corresponding range
Voltage	±0.1%	±0.05%
Current	±0.2%	±0.05%
Resolution Measurement	18 bit	
Reading Rate	330ms not triggerable	

**Accuracy of Measurement, Reading via Data Interface:
 Option ZS13**

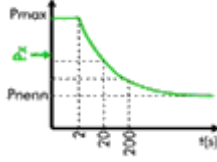
	of measured value (real value)	of corresponding range
Voltage	±0.2%	±0.05%
Current	±0.2%	±0.05%
Resolution Measurement	13 bit	
Reading Rate	min. 200µs (into memory) triggerable	

Power

Nominal Power	up to T_A = 21 °C
Derating	-1.2% / °C for T_A > 21 °C
Overload	1600 W



The height of the possible overload P_{max} depends on the temperature of the device and therefore on the dissipated power previously



The possible overload duration t depends on the height of the overload power P_x

Input Impedance

> 50 kΩ at deactivated load input

Input Capacitance

approx. 2μF / 1000W

Operating Temperature

5°C ... 40°C

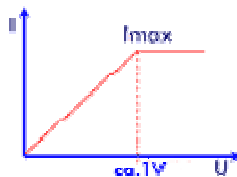
External Control

- Load Switching
- Trigger input and output
- Range switching
- Mode switching
- Emergency shutdown

Protection Equipment

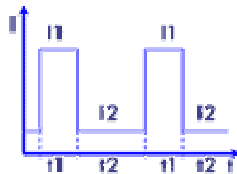
- Current and power limitation
- Over-voltage protection up to 110% of rated voltage ³⁾
- Protection against reverse polarity up to rated current (diode) ⁴⁾
- Over-temperature deactivation
- Transient protection

Minimum voltage



Full current up from approx. 1V.
Below 1V linear Derating.

Modulator



Puls t1: 100μs ... 1s
Puls t2: 100μs ... 1s
(in two ranges)
Load level: each 0 ... 100%

Rise and Fall Time ⁶⁾

60 μs

Parallel Operation	up to 3 devices in master-slave operation (hardware-controlled)
Cooling	infinitely variable controlled fans
Noise max. ⁷⁾	58 dB(A)
Case ⁸⁾ , Weight	19" / 2 HU, 13 kg
Mains Supply	115/230V ± 10%, 50 ... 60Hz
Power Consumption	65 VA

Permissible Operating Voltages: Negative Load Input - Case

Standard	125V AC
with Option ZS06	500V AC ⁵⁾

Colour

Front Panel	RAL7032 (pebble grey)
Sides, Lid	RAL7037 (stone grey)

Electric Safety DIN EN 61010-1

EMC, CE-Mark DIN EN 61326-1
DIN EN 61000-3-2
DIN EN 61000-3-3

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- 1) 500 V with option ZS06 (except a Zero-Volt-Option is installed)
 - 2) for units with 3 and 4 setting ranges the power monitoring signal is referred to the highest range
 - 3) 101% for 800V devices
 - 4) no protection against reverse polarity at installed Zero-Volt-Option
 - 5) except a Zero-Volt-Option is installed
 - 6) Rise and fall times are defined as 10%...90% and 90%...10% of the maximum current (measured in constant current mode - FAST)
 - 7) measured at the front panel at 1m distance
 - 8) 1HU = 44.45mm