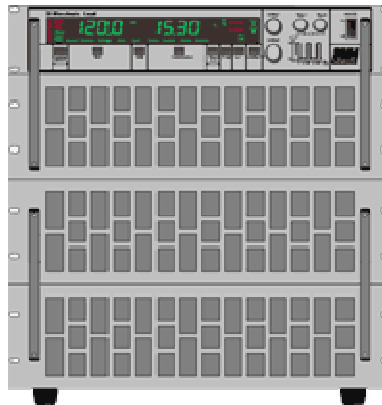


## DATASHEET 1310-12660

### Operating Modes Setting

Current:	Voltage:	Resistance:	Power:
0 ... 60 A	0 ... 200 V	0.033 Ω ... 111 Ω	0 ... 4200 W
0 ... 180 A	0 ... 600 V	0.011 Ω ... 37 Ω	0 ... 12600 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:

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

	of setting	of corresponding range
Voltage	<b>±0.2%</b>	<b>±0.1%</b>
Current	<b>±0.2%</b>	<b>±0.1%</b>
Power	<b>±2%</b>	<b>±0.5%</b>
Current Limitation *	<b>±1%</b>	<b>±0.4%</b>
Trigger Voltage *	<b>±1%</b>	<b>±0.4%</b>

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

## Accuracy of Analog Monitor Outputs: 0 ... 10V for Current, Voltage, Power <sup>2)</sup>

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

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

## Accuracy of Setting Programming via Data Interface:

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

## Accuracy of Measurement, Reading via Data Interface:

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

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

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

## Power

Nominal Power	up to $T_A = 21\text{ °C}$
Derating	-1.2% / °C for $T_A > 21\text{ °C}$
Overload	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

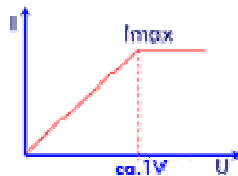
**External Control**

- 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 <sup>3)</sup>
- Protection against reverse polarity up to rated current (diode) <sup>4)</sup>
- 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 <sup>6)</sup>

**60 µs**

### Parallel Operation

up to 3 devices in  
 master-slave operation  
 (hardware-controlled)

### Cooling

infinitely variable  
 controlled fans

### Noise max. <sup>7)</sup>

**76 dB(A)**

### Case <sup>8)</sup>, Weight

**19" / 11 HU, 84 kg**

### Mains Supply

115/230V ± 10%, 50 ...  
 60Hz

### Power Consumption

**580 VA**

### Permissible Operating Voltages: Negative Load Input - Case

Standard	125V AC
with Option ZS06	500V AC <sup>5)</sup>

### 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

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