

# **HEINZINGER ERS**

High Dynamic Dual-Channel Test Bench Energy System

# ERS

For low and high voltage applications

#### **Technical Benefits**

- 2 independent output channels for simultaneous testing of two devices.
- Galvanic isolation between channels and mains
- Energy-balancing between the output channels
- Increased power with external power supply or battery
- 250kW per channel
- Highly dynamic rise time
  <1ms prepared for increasing demands</li>
- CAN Interface (1kHz)
- Comprehensive security
  features







Energy Balancing



The relevance of 48V vehicle onboard power systems is grown through the use of Micro- and Mild-Hybrid-Systems. This demands not only new components and modules, but also new requirements for the test systems. An optimal design of the Heinzinger high dynamic ERS with regenerative feedback for these tasks is guaranteed by a continuous ongoing development process. The combination of high control accuracy, low ripple and a wide output voltage range from 48V to 1000V offers many opportunities for users to test the DUT under realistic operating conditions.

The ERS can be used both, as battery simulator, or as battery tester. They support customers needs as



Energy balancing between the output channels



Standard units of the ERS series are available as single channel or dual channel units. Dual channel units offer, besides the capability for power output distribution, a wide range of connection variations. The power supply units are universally applicable to different applications and significantly more cost-effective in comparison to two single channel units.



Increased power with external power supply or battery



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# **HEINZINGER ERS**

## High Dynamic Dual-Channel Test Bench Energy System

Output		
device power	±50 250kW	
output voltage	1000V	
output current	±1200A	
output reference	Galvanic isolation by resonance converter between mains and Channel 1 to Channel 2	
Accuracy dynamics		
voltage accuracy	≤0.1 % FS	
voltage rise time	< 1ms	
(10 % - 90 %)	[resistive load]	
setting resolution	0.1V	
residual ripple	≤0.2 % Unom (f=0-1MHz)	
current accuracy	≤0.1 % FS	
current rise time	<1ms	
(10 % - 90 %)	[resistive load]	
setting resolution	0.1A	
residual ripple	≤0.4 % Inom (f=0-1MHz)	

## Block diagramm and operation range ERS



#### Options

- Insulation monitoring
  Continuous two stage insulation and ear
  fault monitoring (switchable)
- DC-output relays
  to enable a galvanic disconnection of the load
  at no load switching condition

#### • Battery test bundle

- Zero current activation
- Active discharge by energy recovery to the mains
- Discharge of the output capacitance when switching off
- Dynamic control mode change enables automatic selection of operation mode like CC, CV or CP, depending on the set values & load
- Second-level battery simulation through RC-Network

### **Main connection**

AC input voltage	3x380 480V~ 3P/N/PE
AC input frequency	47 63Hz
oower factor	≥0.98

### Ambient conditions

operating temp. humidity cooling 5... 40°C 15... 5 % (non condensing) water cooled system

# tandards

orotection class	IP 54 EN 60529
EM emissions	EN 61000-6-4
	EN 61000-6-2
safety	EN 61010

Version 02/2020 subject to technical modifications



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