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# High Current Ripple Generator-System

for voltage / current ripple immunity testing of EV voltage class B  
equipment according to LV123 / VW80300 / ISO 21498-2\_2021 etc

**Modular • Highest Power • Best Efficiency**

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## Key features:

- System components:

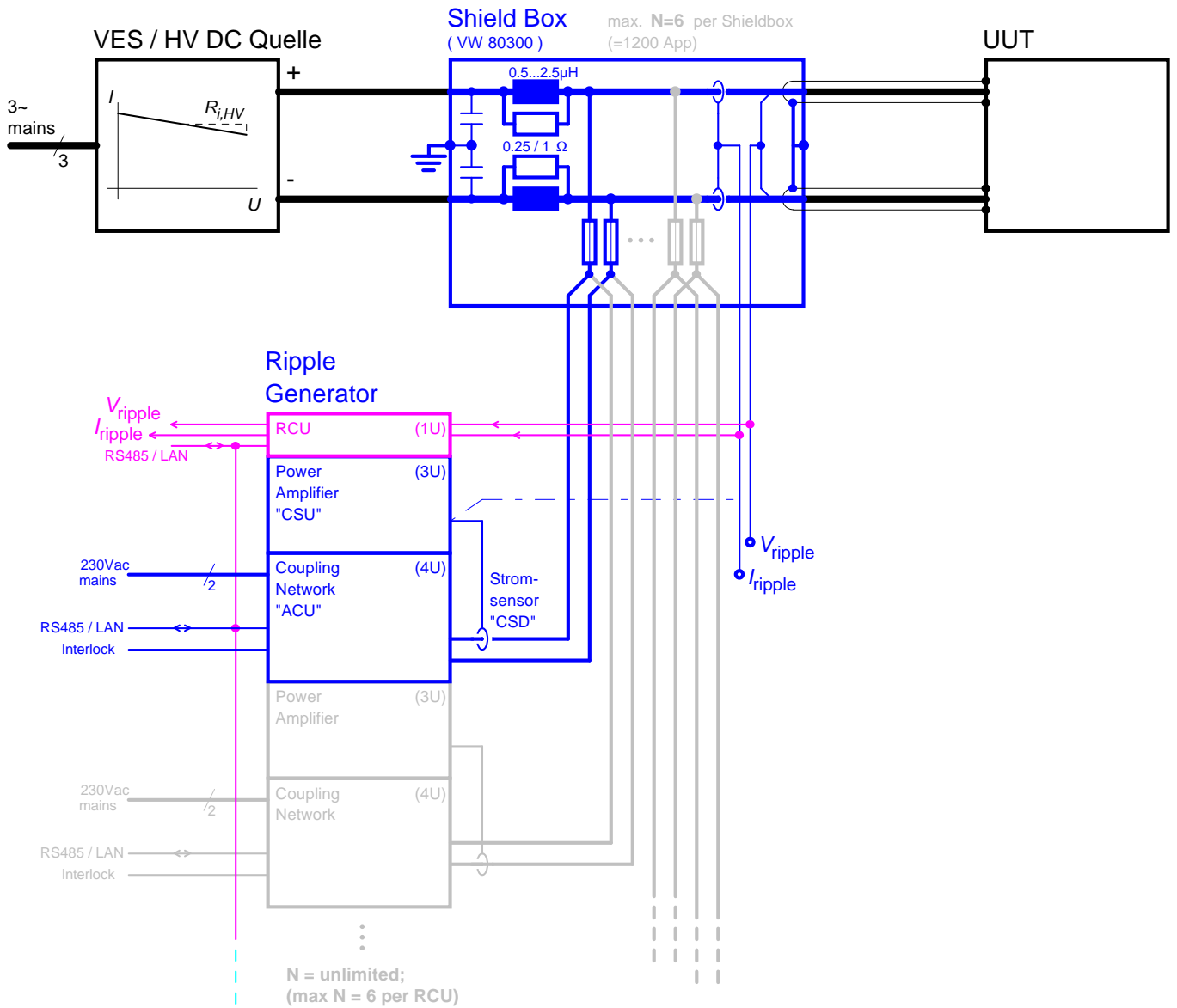
**Ripple Generator** (Switchmode Power Amplifier + Integrated Coupling Network)

**Shield Box** (LISN, "artificial network", with integrated differential AC-current sensor)

**Ripple Control Unit (RCU)** feat.

- automatic (narrowband, closed-loop) DUT ripple voltage or DUT ripple current control
- parallel operation of up to 6 Ripple Generators (**up to 1200 A<sub>pp</sub>**)
- Very high Ripple Output Current: **120 A<sub>pp</sub> / 200 A<sub>pp</sub>** (selectable; single unit)
- Very high Ripple Output Power: **4 kVA<sub>rms</sub>** (single unit).
- Very high Ripple Output Voltage: **350 V<sub>pp</sub>** (@ 120 A setting) / **170 V<sub>pp</sub>** (@ 200 A setting)
- Scalability: Virtually **unlimited parallel operation** of Ripple Generators in customized setups
- Frequency range: **150 Hz -300 kHz**; no range switching required
- Non-invasive **parallel ripple injection**
- Supported DC voltages: **0 to 1200 V**
- Shield Box max. DC current: **1200 A**
- Interface / Connectivity: RS485 or LAN, simple protocol, easy integration into any test stand automation system
- By far **most energy efficient** (only single 230 V 16 A 1~ outlet required for >600A<sub>pp</sub> system) available
- By far **most lightweight, small and portable** (Ripple Generator 600 A<sub>pp</sub>: <120 kg, Shield Box 1200 V / 1200 A: <60 kg) system in market
- **Rugged**: Protected against all kinds of DUT failure (even under full DUT load)
- **Field proven performance** in the most demanding applications (high power axle- / inverters and Power-HIL test stands, not only simple HV vehicle battery testing)  
Customer references available on request

### System topology:

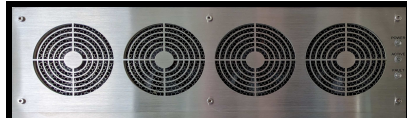


## System Components

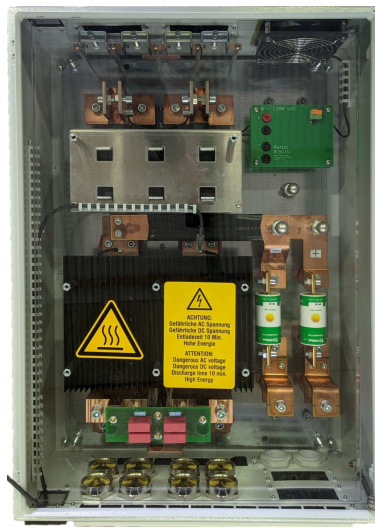
Ripple Control Unit RCU



Switching Amplifier (Current Source)



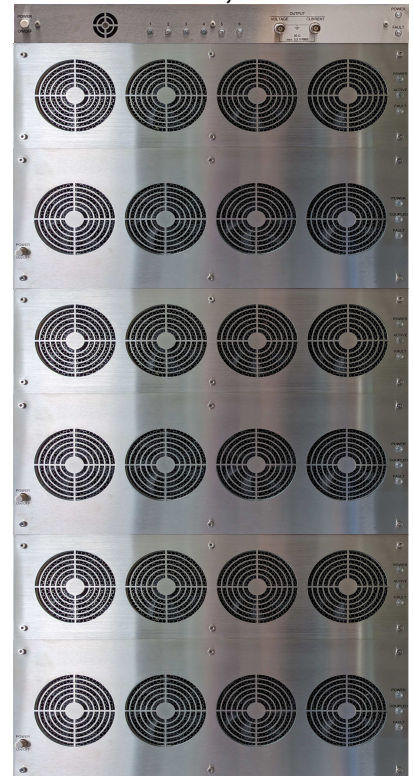
Integrated Coupling Network



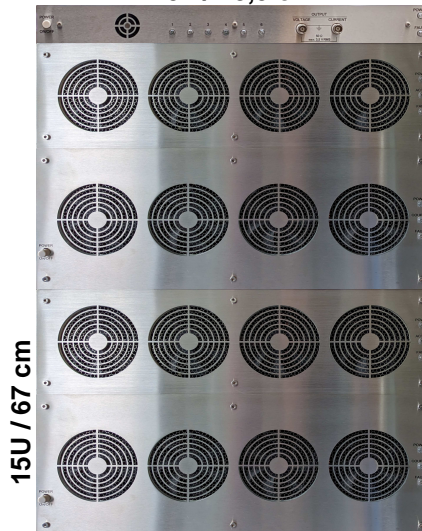
Shield Box

## Configurations

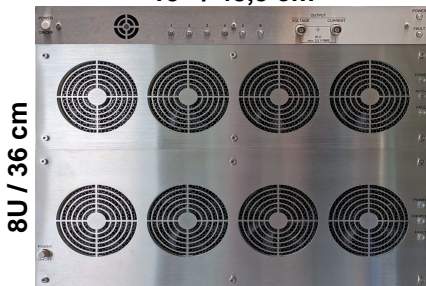
12 kVA  
600 App Ripple  
19" / 48,3 cm



8 kVA  
400 App Ripple  
19" / 48,3 cm



4 kVA /  
200 App Ripple  
19" / 48,3 cm



8U / 36 cm

15U / 67 cm

22U / 98 cm

**Applications:**  
Testing of  
- HV AC Compressors  
- HV Pumps  
- DC/DC Converters

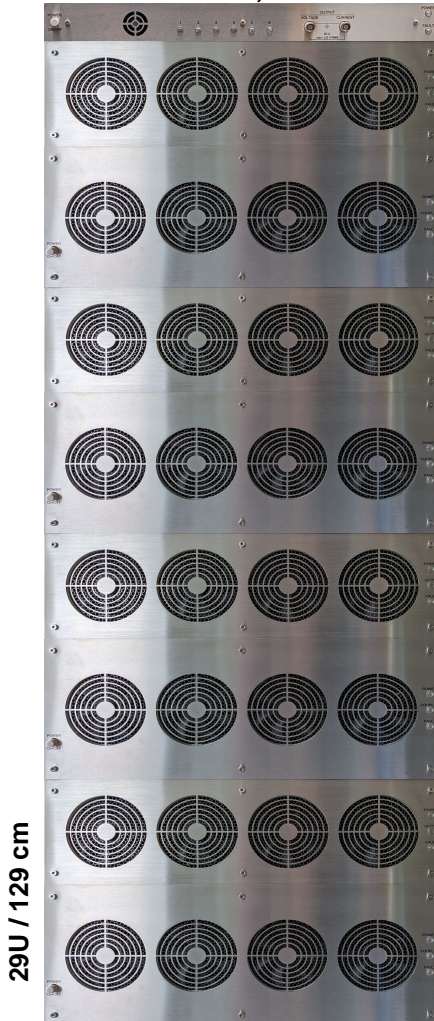
**Applications:**  
Testing of  
- HV AC Compressors  
- HV Pumps  
- DC/DC Converters  
- Small Inverters

**Applications:**  
Testing of  
- Medium Power Inverters  
- HV Axle Drives  
- Small Batteries

## Configurations

**16 kVA  
800 App Ripple**

**19" / 48,3 cm**



**29U / 129 cm**

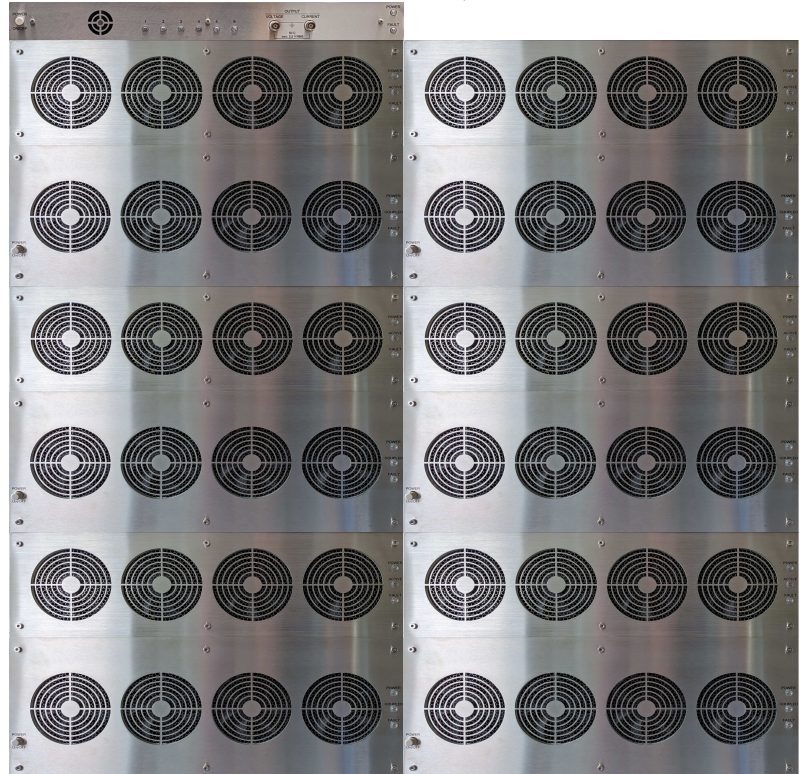
**Applications:**

**Testing of**

- Medium Power Inverters
- HV Axle Drives
- Medium Size Batteries

**24 kVA  
1200 App Ripple**

**2 x 19" / 2 x 48,3 cm**



**22U / 98 cm**

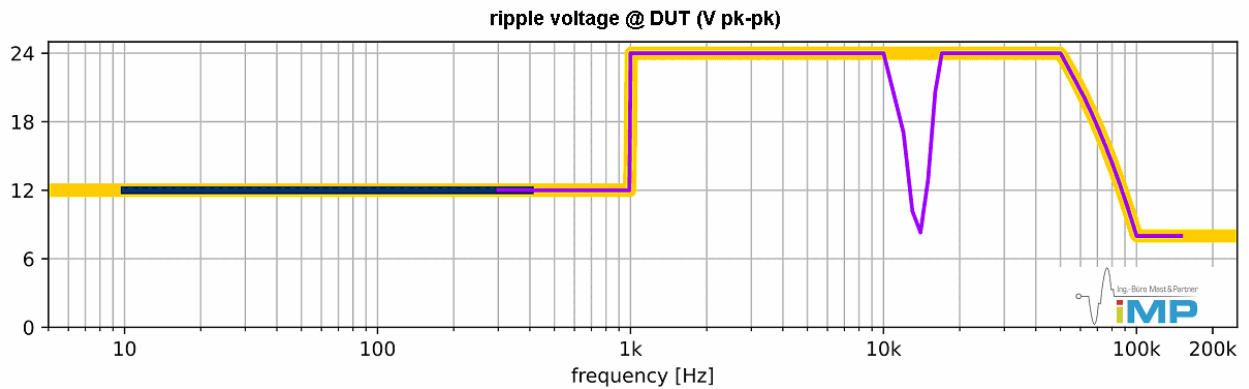
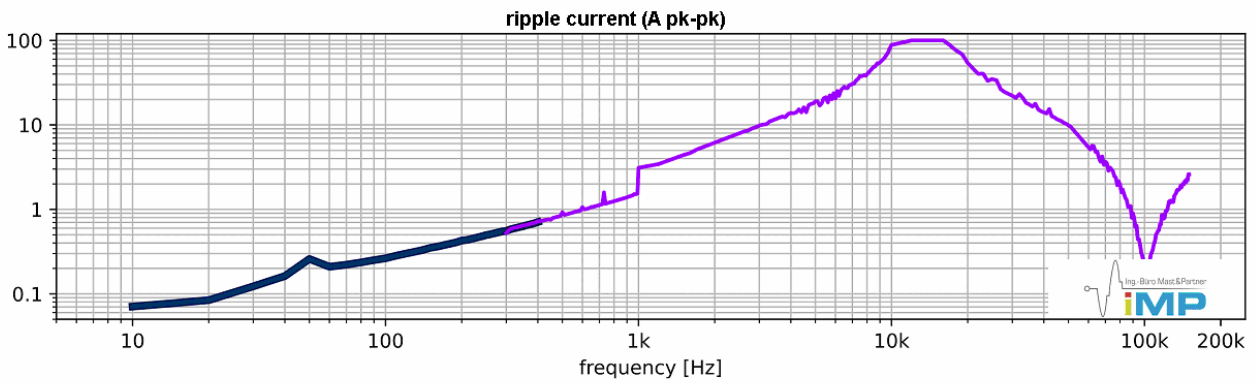
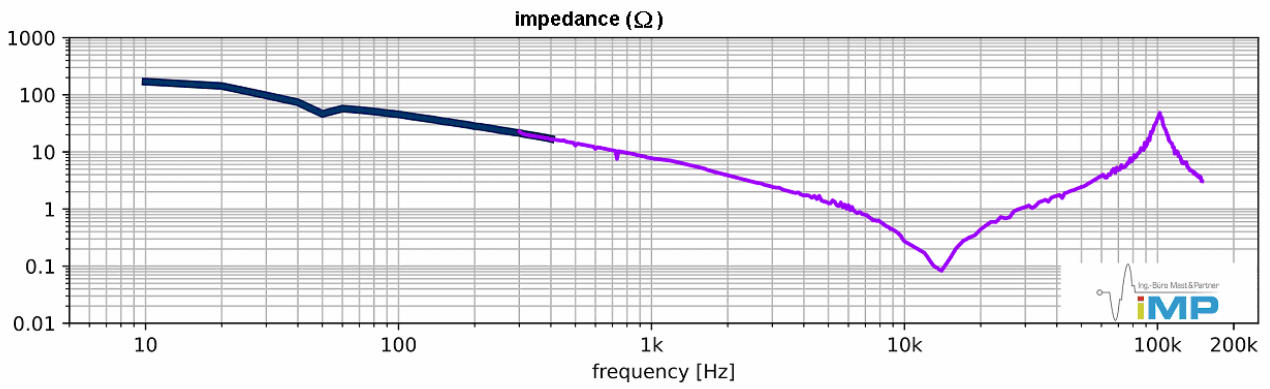
**Applications:**

**Testing of**

- High Power Inverters
- HV Axle Drives
- Large Batteries

**Example Test Results:**

DUT: Hydraulic pump for active suspension,  $U_{HV} = 400\text{ V}$



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