

Test system for Reduction Factor r_k

Electromagnetic shielding measurement of signalling copper cables



DESCRIPTION

A telecom copper cable placed in the vicinity of a power line will suffer from electromagnetic perturbation. This will be especially important in the case of mono-phase lines (railways traction system) as compared to three phase lines (power lines). Signal perturbation, which causes reduction in the signal/noise ratio, could lead to accidents such as aspect change of railway signals. This is why it is essential to measure the screening effect of the cable armoring, represented by the Reduction Factor r_k .

The test equipment for the reduction factor complies with the standards while allowing for a variable distance between the loop conductor and the cable under test.

KEY FEATURES

- **Fast and compliant**
 - Fast measurement to avoid a heating up of the sheath
 - Compliant to major standards
- **Unique**
 - Only automatic and complete solution available on the market
- **Connected**
 - Controlled by our software for full traceability
 - Can be interconnected with MES or ERP systems



AESA Cortailod

TECHNICAL SPECIFICATIONS

Parameter	Reduction factor r_k	
Standards	Performs all electrical tests on cables responding to: <ul style="list-style-type: none"> DIN 57 472 part 507 (VDE 0472 part 507) IEC 62153-4-17:2018 NF F 07-024 (option) 	
Accuracy	<5% of measured value+ 0.01	
Components	<ul style="list-style-type: none"> 1 Signal generator 1 Power amplifier 1 transformer 1 lock-in (DC-500kHz) for the signal generation and voltage measurements 1 measurement bench according to standards for 1m cable (optionally 2m) 1 License AESA measurement and result management software 1 Windows Personal Computer 	
Supply Voltage	100 - 240 VAC / 50 - 60 Hz, Nominal consumption 5000 VA	
Dimensions	Instrument: 600 x 490 x 650 mm, 130 kg (indicative) Test adapter: 1300 x 600 x 100 mm, 10 kg (2300 x 600 x 100 mm, 25kg alternative)	
Version	1 meter connecting frame	2 meters connecting frame
Article No	47.1000.0007.0	47.1000.0008.0

PERFORMANCE

The power supply has the following characteristics, measured on a 2m bench closed with a copper bus bar (5x30mm²).

The loop inductance is close to 4μH (measured with a LCR Meter at 50Hz) as prescribed in the relevant standards. Its DC resistance is 1.2mΩ.

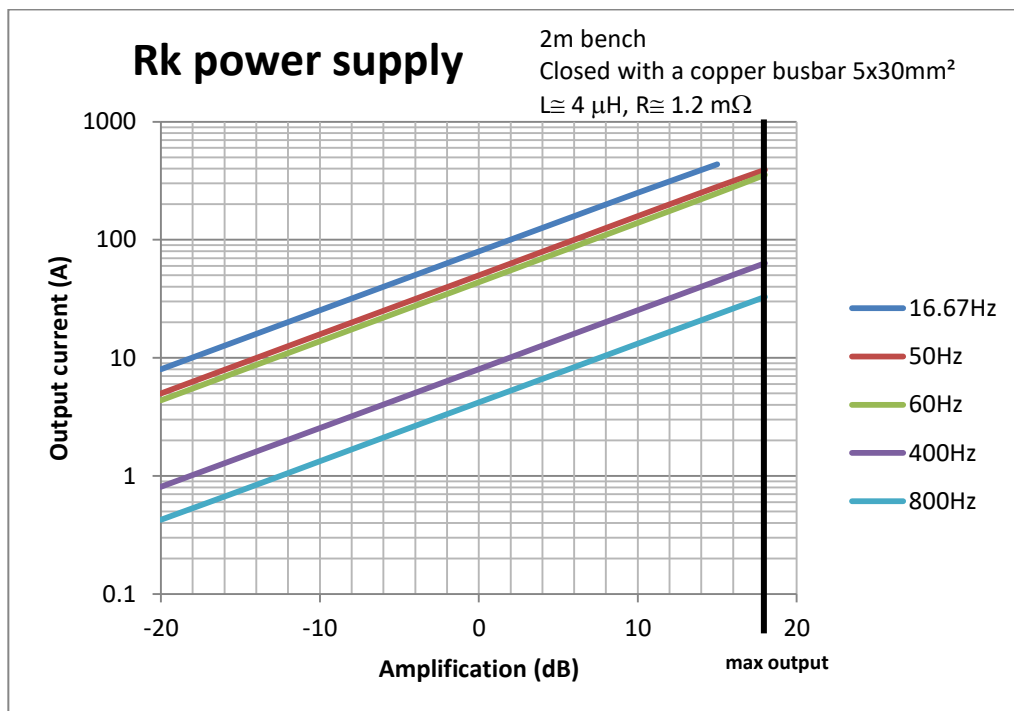


Figure 1: Output current as a function of amplification

Product design and specifications are subject to change without notice