



FRANKONIA

EMC Test-Systems GmbH

MP-50 / MPF-50

Current monitoring probe

DATASHEET



Features:

- ✓ As required in IEC/EN 61000-4-6
- ✓ Suitable for BCI testing per ISO11452-4, RTCA/DO-160 section 20, MIL-STD-461 and various automotive standards
- ✓ Individual calibration data with each probe

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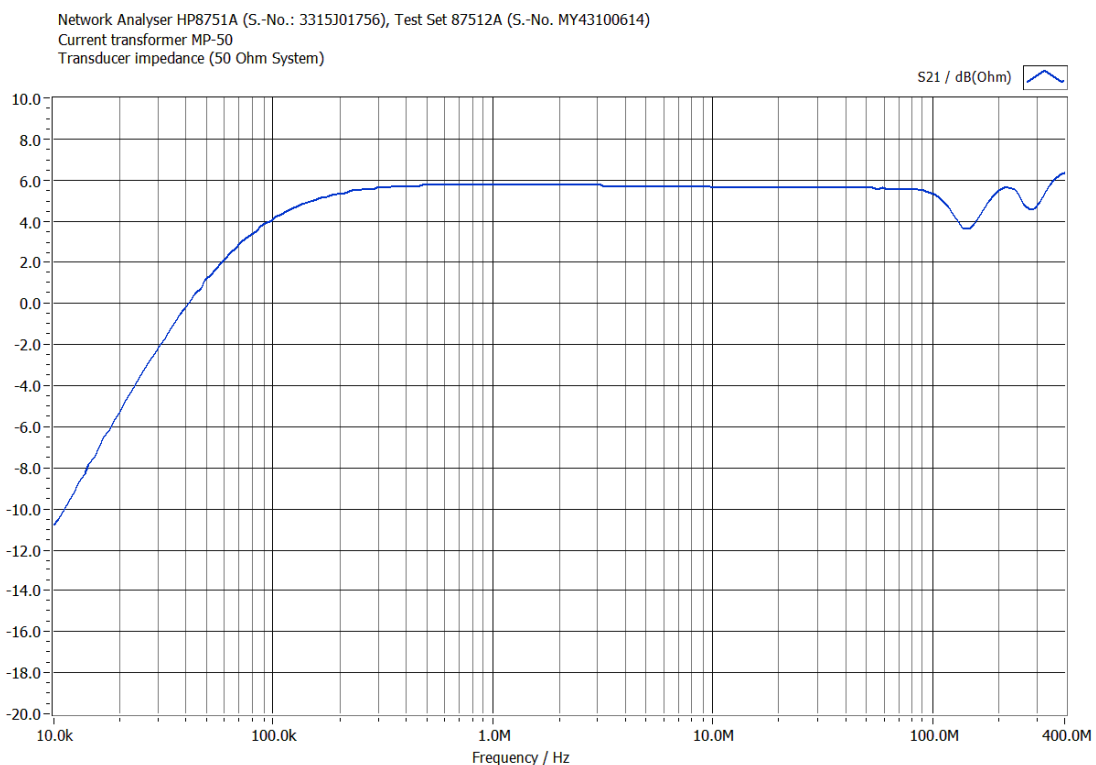
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DESCRIPTION

The Current Monitoring probes may be used whenever RF current measurements are required. Current measurements are made by placing a current carrying conductor within the "sensing" window of the probe and measuring the probe's output voltage with an RF detector. Calibration of the probe permits the conversion of the voltages measured to current. Current measurements can be made over the frequency range shown in the transfer impedance curve furnished with each probe. There is virtually no loading of the circuit and the technique permits normal operation of the device under test during measurements.

The MP-50 and MPF-50 can be used for the procedure for clamp injection when the commonmode impedance requirements cannot be met given in chapter 7.4 of IEC/EN 61000-4-6 „Immunity to conducted disturbances, induced by radio frequency fields“. The MP-50 can also be used as current monitor for BCI testing as per ISO11452-4, RTCA/DO-160 section 20, MIL-STD-461 and various automotive standards.

TYPICAL TRANSDUCER IMPEDANCE



$$I \text{ dB}\mu\text{A} = V_p \text{ dB}\mu\text{V} - Z_t \text{ dB}\Omega;$$

I = current; V_p = measured voltage; Z_t = receiver input impedance



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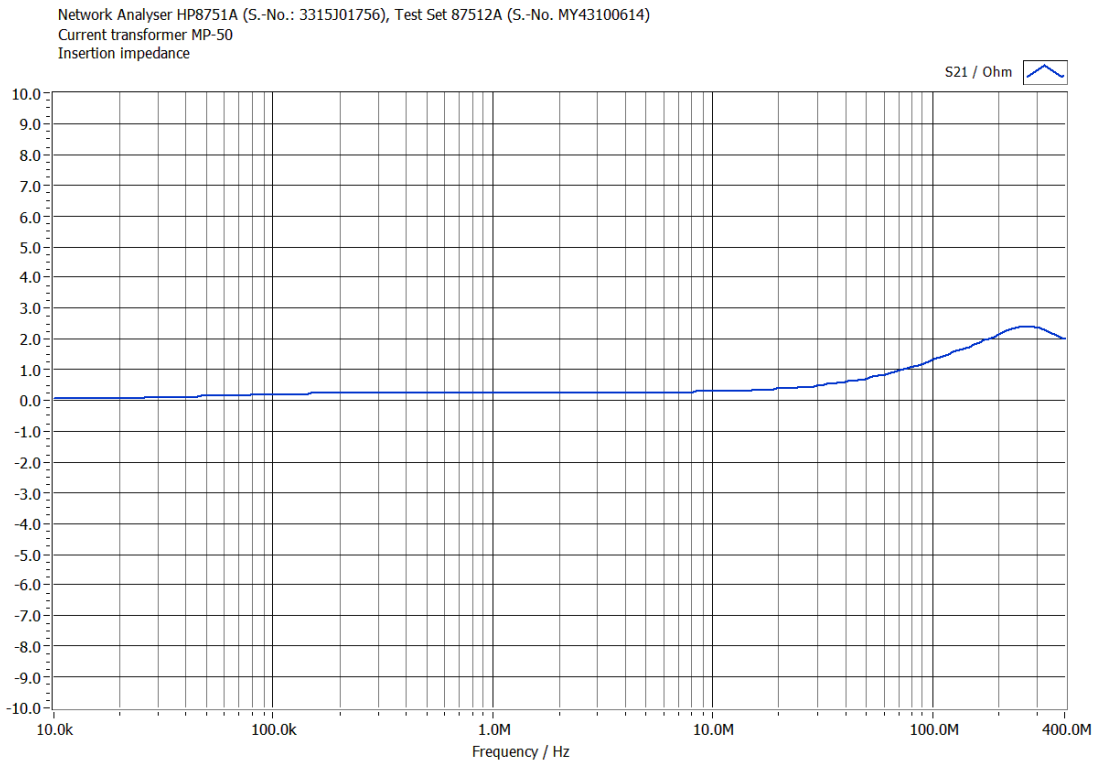
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TYPICAL INSERTION IMPEDANCE



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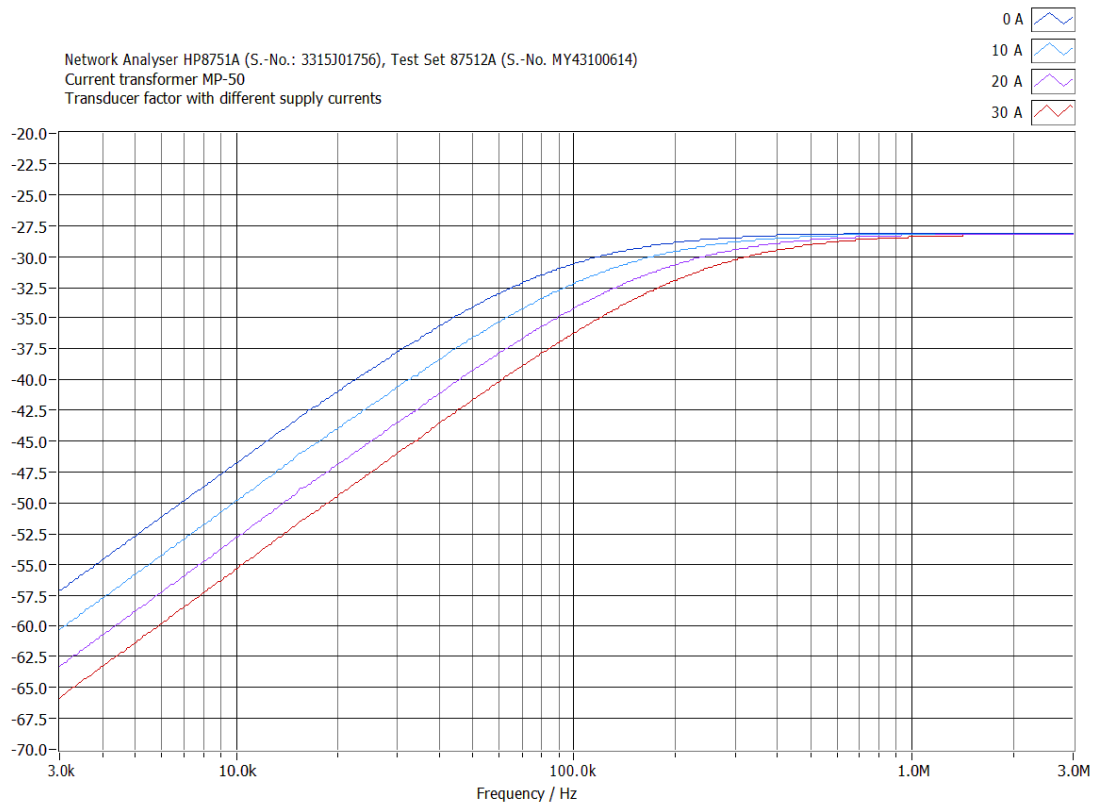
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TRANSDUCER FACTOR WITH DIFFERENT SUPPLY CURRENTS



The MP-50 current monitoring probe measures RF common mode currents (asymmetrical currents) on single conductors or conductor bundles. Depending on the low frequency current saturation effects may occur, which shift the lower frequency characteristics to somewhat higher frequencies.

Only the sum of currents under consideration of sign is of importance, therefore complete conductor bundles are less critical than single conductors. To estimate the saturation effects transducer factors are given for different low frequency currents.



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TECHNICAL SPECIFICATIONS	MP-50	MPF-50
Frequency range	10 kHz – 400 MHz	10 kHz – 400 MHz
Insertion impedance	< 2,5 Ohm	< 2,5 Ohm
Cable diameter	< 46 mm	< 45 mm
Signal output	BNC socket	TNC socket
Max signal current (10 kHz – 400 MHz)	1 A	1 A
Dimensions	Outer diameter 115 mm Thickness 30mm Overall length 136mm	Outer diameter 115 mm Thickness 30mm Overall length 136mm
Weight	0,55 kg	0,55 kg



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