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Inrush Current of Electronic Converters and Core & Coil Transformers

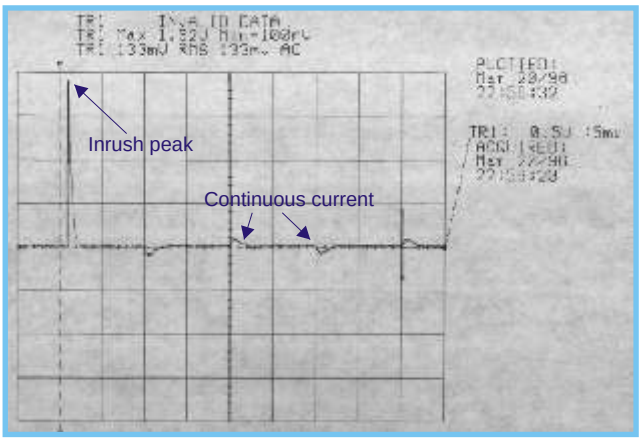

Diagram: Inrush current of an EVG 40/1

Tube load: 1570 mm; diameter: 18mm
Peak value of inrush current: 1.92 A
r.m.s. value of current: 0.233 A

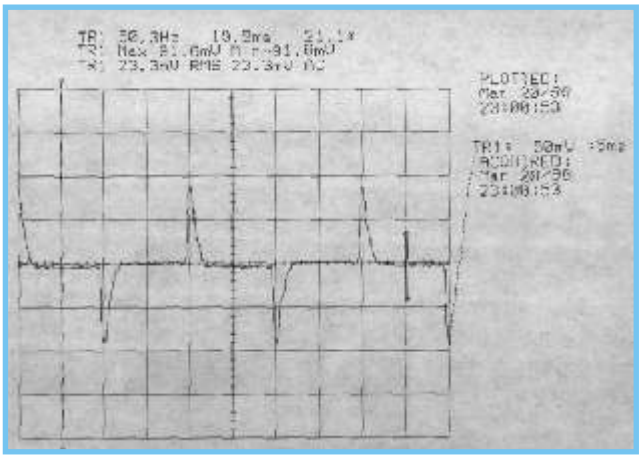

Diagram: Mains current of an EVG 40/1

Tube load: 1570 mm, diameter: 18mm
r.m.s. value of current: 0.233 A

At the instant of switching, electronic transformers require a higher current than during continuous operation.

The reason for this higher current are electrolytic capacitors at the mains input which have to be charged first when the transformer is switched on.

The example on the left applies to the EVG 40/1: the inrush current is 1.92 amps while the rated current (continuous current) is only 0.233 amps.

The inrush current can be as high as 12 times the rated current.

This characteristic has to be taken into account when choosing an appropriate circuit-breaker. If too many transformers are connected to a circuit breaker which is not suitable, it will interrupt the power supply even though no fault has occurred.

There are circuit breakers with different tripping characteristics:

B-type: standard automatic circuit breaker

K-type: suited for applications where starting currents and inrush peaks are critical.

Therefore, a K-type characteristic should be used when connecting multiple EVGs or core & coil transformers to one circuit breaker.